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16 January 1984

Worldwide Report

TELECOMMUNICATIONS POLICY,
RESEARCH AND DEVELOPMENT



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16 January 1984

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

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SOVIETS REPLY TO NORWEGIAN PROTEST OF KIEV TRANSMITTER

Oslo ARBEIDERBLADET in Norwegian 24 Nov 83 p 2

[Article: "Kiev Transmitter Disturbs"]

[Text] Stavanger (NTB). Rogaland Radio is bothered by increasing disturbances from the Kiev transmitter. STAVANGER AFTENBLAD reports that the Soviet Union at the same time maintains in a letter to the Norwegian Televerket that less noise has been registered this fall than earlier.

The signals from the transmitter building in Kiev are of such a poor quality that they disturb several hundred channels at the same time. Gunnar Borvik, radio manager at Rogaland Radio, says that the problems have improved lately.

The letter from the Soviet government comes as an answer to a Norwegian inquiry as of August of this year. The Russians maintain that they also have been exposed to similar interference from radio stations in other countries. Their own monitoring stations have, however, registered less disturbances this fall than earlier.

According to STAVANGER AFTENBLAD, the Kiev-transmitter is a Soviet military radar installation, whose purpose is to discover and warn against attacking missiles on their way to the Soviet Union. So far four such installations have been built at various locations in the Soviet Union.

The disturbances from the Kiev-transmitter showed up at the end of the 1970's. At times it was so powerful that it nearly blocked out the radio traffic.

12550

CSO: 5500/2561

BRIEFS

WORLD COMMUNICATION CONFERENCE--The deputy director responsible for engineering at Radio Botswana, Mr (Dave Harris), says in broadcasting the method of providing a service often determines which part of the country benefits most. Speaking at the World Communication Conference recently, Mr (Harris) said a conflict always arose as to whether broadcasting should be more concentrated in areas of high population or in the more remote parts where people were served with little or next to nothing. Mr (Harris) also explained that the further a radio wave traveled, the poorer its received quality became at the far end. Shortwaves traveled long distances, but their quality was suspect. Medium wave was moderately good, he says, whereas VHF, FM, and (?TV) frequencies gave excellent qualities over short distances. Mr (Harris) said about 50 transmitting locations were needed to cover the whole country on VHF and FM, 20 on medium wave--but only 1 to do the same job on short wave. The biggest problem, said Mr (Harris), was limited funds and technical manpower. That was why shortwave transmitters were common in Botswana as they were easier to get to site than other wave lengths. The World Communication Conference was held at the Gaborone Holiday Inn. [Text] [MB221022 Gaborone Domestic Service in English 1125 GMT 21 Dec 83 MB]

CSO: 3400/416

SIGNAL FORMAT OF CHINA'S AUTOMATIC TELEPHONE SWITCHING NETWORK

Beijing, DIANKUO JISHU [TELECOMMUNICATION TECHNOLOGY] in Chinese No 6, 1983
pp 27-28.

[Text] 1. The National Standard of Automatic Telephone Signal Format¹ Is an Important Technical Standard for the Telephone Communication Network

In an automatic telephone network, a completed telephone connection, which begins with the lifting of the receiver by the calling party and the response by the called party and lasts until the end of the conversation, involves the transmission and exchange of various kinds of information among the different components of the telephone switching system. This information is represented by signals whose contents, structure, transmitting sequence and technical parameters must be specified according to some unified standard. This is the so-called "signal format."

There are three major types of signals to be transmitted and exchanged: 1) Signals between the user and the switching system, 2) signals between components within a switching system, and 3) signals between switching systems. The main functions of the signals include the monitoring function, which reflects the status and condition of a particular component; the selection function, which is related to the process of establishing a connection; and the operational function, which is required for efficient network utilization and system management.

The content of the signal format directly affects the quality of telephone connections, system reliability and the duration of connect time. Therefore, to a certain extent it reflects the technical standard of a telephone network.

The signal format must be uniformly specified across the nation, and all equipment connected to the telephone network must be strictly compatible with this specification. This is necessary because 1) it ensures that every component in the system can carry out an orderly "conversation" with another. 2) it facilitates the standardization and maintenance of switching equipment and reduces development cost and 3) it ensures uniform-quality standards to achieve reliable telephone connections.

II. The Main Contents of China's Signal Format

China began its research on signal format in the 1950's, but its large-scale use and formal specification did not occur until 1973. After a decade of actual implementation with many amendments and modifications, a unique signal format has been established in this country.

1. China's signal format was established by consulting CCITT specifications and considering the actual conditions in this country. The primary considerations were applications for telephone networks with crossbar (or pseudo-electronic) switching equipment; consideration was also given to the status of the current step-by-step system and the eventual introduction of digital program controlled systems in the future.

2. The main contents of the signal format are as follows:

(1) Line Signal

The single-frequency pulse signal within the band can be used in interoffice trunk lines with frequency division or time division multiplexing. It is transmitted using the method of stage-wise discrimination and corrective repeater. The "standard" specifies the definitions and functions of the various signals: which include the busy signal, the disconnect signal, the repeat-disconnect signal, the response signal, the monitor release signal, the blocked signal, the repeat-ring signal, the forced-disconnect signal, the response ring signal and the forced-release signal. The frequency of the line signal is 2600 Hz, which was selected based on the unique features of the Chinese language, reliability considerations of receiver action and minimization of false action. The line signal is composed of short-signal units with a nominal duration of 150 μ sec, long-signal units with a nominal duration of 600 μ sec, continuous signals as well as composite long- and short-signal units. In order to ensure reliable operation, the requirements of signal division and the technical parameters of signal generators and receivers are also specified. The line signal is primarily used as a monitoring signal for establishing long-distance telephone switching between long-distance offices and between a long-distance office and a local office.

(2) Multiple-frequency Sender Signal

There are two types of multiple-frequency sender signals: forward and backward signals. They are transmitted using the multiple-frequency code, mutual control and terminal to terminal scheme. They are primarily used as control signals for establishing long-distance (or local) telephone switching circuits. The forward signal has 6 different frequencies: 1380, 1500, 1620, 1740, 1860, and 1980; based on a code of 2 out of 6, a maximum of 15 different signals can be composed. The backward signal has 4 different frequencies: 1140, 1220, 2000, and 2500; based on a code of 2 out of 4, a maximum of 6 different signals can be composed. Multiple-frequency sender signals use the forward and backward, mutual-control mode of transmission. The so-called mutual control means that transmission of the forward (backward) signal is accepted only after a backward (forward) signal is received and the next forward

(backward) signal is transmitted as dictated by the received signal. The forward signals can be divided into two groups: group I and group II. The group I signals are composed of control signals and digital signals. There are a total of 10 digital signals including the K_1 (for primary caller), K_2 (for long-distance link), K_3 (for long-distance or local link) and the 1~ signals. The group A backward signal is the mutual-control signal for the group I forward signal; its function is control and verification. The group II forward signal (K_4) is the service signal at the transmitting end. The group B backward signal (C_1) indicates the status of the called party; it serves the functions of verification and control for the group II signals.

The 'standard' clearly specifies the contents and arrangements of various signals. It also provides detailed specification of the signal transmission sequence between long-distance (local) offices during the connect process. Finally, the technical parameters of the transmitting and receiving equipment of a multiple-frequency sender are specified. The signal transmission time is not included in the definition of the mutual-control cycle, and the time required for receiving and transmitting one digit of code is specified not to exceed 250 milliseconds.

(1) Interoffice D.C. Signal

Interoffice d.c. signals include line signal and digital signal. Line signal is expressed as a d.c. polarity and digital signal is expressed as a d.c. pulse. Interoffice d.c. signals are primarily used between crossbar (pseudo electronic) offices and offices with step by step systems and between manual long-distance offices and automated long-distance offices. The 'standard' specifies the range of applications of d.c. pulse digital signals. There are 10 different line signal formats which match the interoffice d.c. signals in order to meet the needs of local interoffices, long-distance trunk systems and special services. The line signal format was determined on the basis of China's existing long-distance switching equipment and considerations of future development. Its feasibility has been demonstrated after 10 years of actual use.

(2) User Signal

The user signals refer to signals between the user telephone set and the switching devices, which include the user status signal and the digital signal generated by the dialing (or push-button) operation. The user status signal is generated by the forslapping in the telephone set to activate or reset the equipment in the telephone office by closing or opening the d.c. circuit. The digital signal generated by user dialing is in the form of d.c. pulses for a rotary telephone set and in the form of combinations of sound frequencies for a push-button set. The 'standard' provides specifications for the pulse speed, the duty cycle of the rotary set and frequency combinations and technical parameters of the push-button set as well as technical conditions of the user circuit.

(3) The Current and Signal Sound

The current and signal sound standard specifies the time of sleep sound and the point of origin of the long-distance and local wire in equipment. It is an important basic standard, which states that the ring current must be 25 mA and the ring tone have with less than 10 percent harmonic distortion and 20 dB of output voltage. This specification is useful for improving the noise and crosstalk conditions inside the office and for establishing desirable data transmission services. Specifying the point of origin of signal sound is useful for improving service standards and increasing the efficient utilization rate.

(4) Special Features of China's Signal Formats and Future Prospect

The current signal formats in China are established mostly according to CCITT rules. The line signal is established on the basis of the international No. 3 signal format, the sender signal is basically consistent with the international standard, and the push-button telephone parameters of the user signal and the signal band frequencies are also consistent with international standards. In short, the signal formats are essentially in agreement with international specifications.

In terms of technical standards, the parameters of line signal division, signal generation and receivers are comparable or even higher than international specifications. The IC technical parameters of sender transmission and reception are completely in agreement with international standards.

In dual reception is the dual-frequency, manual-control cycle, which is lower than the international specification. Among the sender transmission and reception parameters, three parameters including the dual-frequency ratio, difference and the range of receiver input voltage are still below standard and there is little doubt that they will reach standard with additional effort.

As the telephone communication industry continues to develop, the 'standard' will be supplemented by new materials, such as requirements of international communication. Implementation of program-controlled switching equipment in the future and adoption of signal formats of public communication channels.

In conclusion, publication of the national standard of signal formats for China's automatic telephone switching network represents the proud achievement of years of research, production and maintenance management. Strict adherence to the 'standard' in the future will undoubtedly accelerate the development of China's automatic telephone network.

DOMESTIC SATELLITE COMMUNICATION SYSTEM TO BE ESTABLISHED IN CHINA

Shanghai XIANDAI TONGXIN [COMMUNICATIONS TODAY] in Chinese No 10, 1983 pp 8-9

[Article by Zong Ruhou (1350 3067 0624) and Bao Yucheng (0545 5940 2052)]

[Excerpt] China began using international communication satellites in 1977 by importing equipment from abroad and setting up three ground stations in Beijing and Shanghai. It has also begun developing its international satellite communication activities. Since the end of 1974, research and development efforts have been initiated in this country to build satellite ground facilities. Experimental satellite communication stations were constructed in Shanghai, Nanjing and Shijiazhuang. During 1978 and 1979, more than 10 experiments in telephone and television transmissions were performed by using the German and French satellite "Symphonia," and further progress was made in China's satellite technology. In recent years, miniaturized ground stations with 5-6-meter antennae have been successfully developed, providing the necessary technical basis for establishing and developing China's domestic satellite communication system.

In order to verify the feasibility of the technical design of China's domestic satellite communication system and to test the performance of the Chinese-built ground stations, the Ministry of Post and Telecommunications made arrangements with Intelsat during the period from June to October 1982 to use the idle transponders of the two communication satellites INTELSAT IV_A and V located at longitude 60 degrees east above the equator over the Indian Ocean. Experiments in communication and television relays were carried out using the beams covering the eastern hemisphere.

The Eastern hemisphere beams of INTELSAT IV_A and V cover the entire landmass of China. The radiated power level at the edge of the beam is 26 dB watt (dBW). The beam of INTELSAT IV_A covers the country unevenly: The power level near the center of the beam (such as the Zhanjiang region) can reach 34 dBW; the lowest power level in the northern region is 30.7 dBW (see Figure 1). The beam of INTELSAT V provides more uniform coverage, but its power level is somewhat lower than that of INTELSAT IV_A; near the center of the beam, the power level is 33 dBW, whereas at the edge of the beam it is 29 dBW.

Figure 1. The Beam Coverage Diagram of INTELSAT IV_A Located at Longitude 60 Degrees East

Key:

1. Beijing
2. Harbin
3. Hohhot
4. Urumqi
5. Dalian
6. Qingdao
7. Lhasa
8. Guilin
9. Guangzhou
10. Xiamen
11. Shantou
12. Zhanjiang

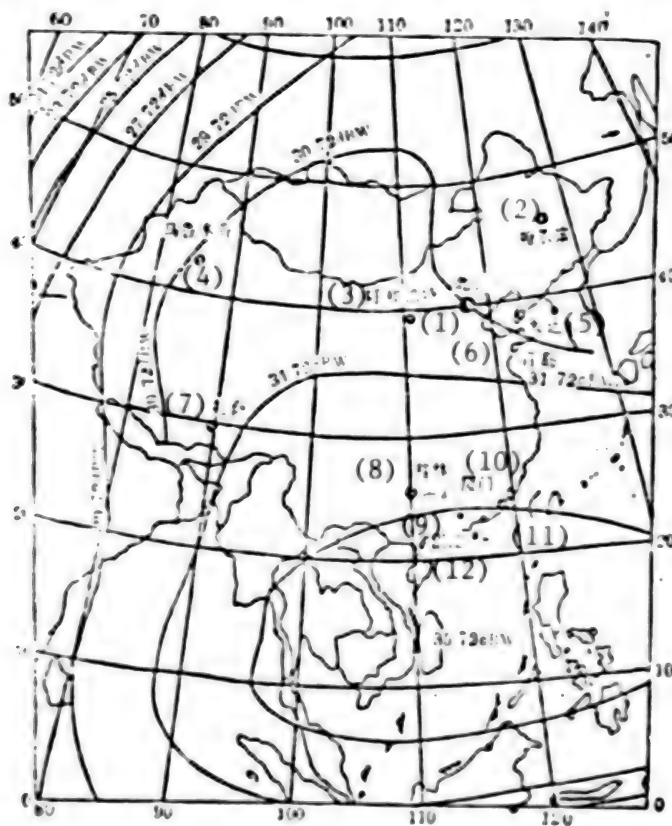


图1 60°E INTELSAT IV_A 卫星覆盖图

More than 10 ground stations participated in this domestic satellite communication experiment: They were located at Beijing, Shanghai, Hohhot, Urumqi, Shijiazhuang, Nanjing, Shijinshan and Chengdu. The antenna diameters were, respectively, 5, 6, 7, 10, 11, 15 and 30 meters. Seven of the ground stations were built in this country. The experiments being performed included: television transmission; transmission of PCM, Δ M and CFM single-channel, single-carrier telephone signals; PCM transmission of 50-Baud telegraph signals; picture and video transmission; transmission of printed materials; 200-Baud data transmission; transmission of news articles and TDMA synchronous signals at 15.36 megabits per second; transmission of frequency-modulated, 24-channel weather maps; as well as transmissions of time standards and signal format for long-distance automatic dialing.

The entire experiment was divided into three phases: verification and test of ground facilities, test of channel operation and functional test.

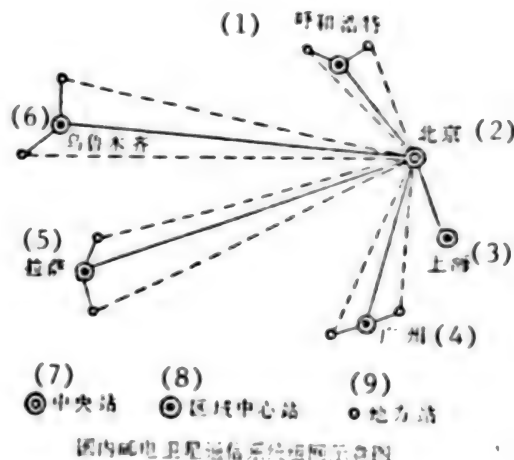
After more than 2 months of testing and experimentation, the Chinese-built ground facilities have performed satisfactorily. Test results from the Hohhot and Urumqi stations indicated that the quality of television transmissions was as good as or even better than local television broadcasts. During the live demonstration at the Hohhot test station, the reporters carried on conversations with Beijing with the same clarity as talking on a local telephone line. The actual test results showed that all the performance indexes of the ground

stations were consistent with the nominal design values. This experiment also demonstrated the feasibility of the plan to carry out domestic communication and television transmission by leasing an idle transponder on an international communication satellite. Satisfactory results were obtained in various experiments of telegraph, telephone, facsimile, data and television transmissions. Thus, this experiment will provide first-hand technical information for establishing a domestic satellite communication system by leasing foreign satellites and building our own ground stations.

Figure 2. Network of Domestic Satellite Communication System

Key:

1. Hohhot
2. Beijing
3. Shanghai
4. Guangzhou
5. Lhasa
6. Urumqi
7. Central Station
8. Regional Center Station
9. Local Station



China has a vast territory with most of its population concentrated in the southeastern coastal region. The remote provinces of Nei Monggol, Xinjiang and Xizang are sparsely populated and have such complex terrains that building a communication system containing wires, cables and microwave relays would require a large amount of investment and costly maintenance. Under current technological and economic conditions, such a system would be difficult to achieve. Before China develops a capability to launch its own practical communication satellites, it seems reasonable to solve the problem of communication and television relays for China's remote regions, tourist spots and newly developed cities along the shores by leasing idle transponders on international satellites. From both the technical and economic points of view, developing our domestic satellite communication system by leasing foreign satellites and building our own ground stations is an efficient and effective approach; it is also a transitional measure toward the establishment of our own satellite communications network.

The Ministry of Post and Telecommunications of China has decided to lease the idle transponder on INTELSAT V located at longitude 60 degrees east above the Indian Ocean at the end of 1984. Its eastern hemisphere beam, which covers this country, has a radiated power of 29 dBW at the edge of the beam and 33 dBW near the center of the beam (see Figure 2); hence it basically satisfies China's communication and transmission needs. Beginning this year, a number of small- and medium-size ground stations will be constructed in Beijing, in Shanghai and in remote regions, tourist spots as well as newly developed cities along the

shores in order to establish China's domestic satellite communication system. These ground stations can be divided into three categories: (1) The central ground station will be located in Beijing. Its primary mission is to provide telephone and telegraph communication links to other stations and to broadcast nationwide television programs. It can also relay television programs transmitted by regional stations and at the same time monitor communication signals from all the ground stations. (2) Regional ground stations will be located in Shanghai and in the capitals of provinces and autonomous regions. Their primary mission is to provide telephone and telegraph communication links to the central station and other ground stations and to broadcast or relay television programs. (3) Local ground stations will be constructed in tourist spots and newly developed cities along the shores (e.g., the special economic zones). Their primary mission is to provide telephone and telegraph communication links to the central station and regional stations and to receive and relay television programs from the central station and regional stations.

Once these ground stations are completed and begin operation, China will then have a moderate-scale domestic satellite communication system. At that time, significant changes in the status of communication all over China will take place, as if there is a giant "star"-shaped exchange station which can reach every corner of this country. Undoubtedly this will greatly benefit China's four modernizations effort, economic growth and the cultural activities of the people.

3012

CSO: 5500/4146

BRIEFS

GOVERNMENT DEFENDS T V PROGRAMMING--"There was no political motive in the T V assignment." The government yesterday vehemently defended the awarding of new television programs and said there was no political motive in that process, maintaining that the new programming was in line with highly professional criteria. The communications minister, Bernardo Ramirez, defended the award and stated that "the operating procedures and system are on view to everyone," according to the program "Operacion Todelar," telecast over that channel. The same program attributed to high-ranking government officials the statement that if a balance in television news reporters occurs, the liberal party would have a virtual majority: (1) Intervision: Yamid Amat, Alfonso Castellanos, Margarita Vidal and Juan Gossain, all liberals; (2) Programmar: Felipe Lopex Caballero; (3) Prego: with William Restrepo and Gabriel Ortiz, liberals; (4) Cinevision: also liberal. In accordance with the Todelar version, these same officials reported that minister Ramirez himself was the first surprised by the "chopping off" of the television novel Nacional from RTI programming, which did not present the two literary and technical scripts required "Regardless of the authors," in this case Gabriel Garcia Marquez to whom the preparation of those scripts had been entrusted.

[Text] [Bogota EL SIGLO in Spanish 10 Nov 83 p 1] 9436

PURCHASE OF TELEVISION EQUIPMENT -- The Second Television Network will increase its coverage by 25 percent, and the national radio station will also improve its coverage and sound as a result of the modern equipment purchased by INRAVISION [National Institute of Radio and Television]. Eduardo Uribe, deputy administrative director of INRAVISION, said that the Second Television Network will have a coverage area that is 98 percent of that of the first television network. Its current coverage area is 73 percent of that of the first network. The following equipment has been purchased to place the two networks at the same level: 84 relay stations; 152 [word indistinct] antennas; 121 yagi antennas with all the equipment for installation, including testing and measurement; 14 fixed parabolic microwave antennas; and 10 portable microwave systems with their transmitters and receivers. [Text] [Bogota Cadena Radial Super in Spanish 0000 GMT 9 Dec 83 PA]

FRANCE TO ASSIST IN MORELOS SATELLITE COMMUNICATIONS SYSTEM

Mexico City EXCELSIOR in Spanish 3 Nov 83 pp 5-A, 30-A

/Text/ Mexico and France yesterday signed a document relevant to French joint participation in both the "Morelos System" satellites which will be placed in orbit in 1985 at a cost calculated at \$150 million and leading to development of rural telephone service for about 13,000 towns.

The agreements, when the ninth meeting of the joint commission on technical cooperation in telecommunications and mail service was over, were signed by the delegate from the ministry of industry and investigation, in charge of mail services, telecommunications and telephones, Louis Mexandreaux, and the under-secretary of communications and transportation, Javier Jimenez Espriu.

The agreement includes French collaboration on automation of the postal service and the promise to automate a central post office in the Federal District during 1 year of trial. The French took part in setting up zip codes in Mexico, but there are complaints that because of lack of follow-up in the process which was to have accompanied the system, it is operating at a fraction of its capacity owing specifically to lack of automation.

There will likewise be overall research into technology for the so-called "Office of the future," which, according to Jimenez Espriu, will be helpful in Mexican government decentralization plans which will shortly start to be implemented in most official departments.

The French likewise showed interest in setting up industries linked to the communications field in Mexico and, as things now stand, the secretary of communications and transportation has offered his support.

"It was a very positive meeting, and the spirit of collaboration shown by the French was considerable," Jimenez Espriu explained at the end of the meeting, and stressed that "very few meetings have culminated like this one nor with the same promise." Jimenez Espriu, in this his initial meeting of the joint commission, pointed out that both countries made it clear that actions are to be taken in accordance with their capability by acknowledging the economic difficulties through which they are passing, and said that the agreements had been made "not with unattainable goals."

Impetus Toward IIT

Based on these plans, a technological exchange is in the works for establishing an Institute of Technological Research [IIT] in Mexico, as well as development of a rural telephone service program for more than 13,000 towns, each with a total population of 500 to 2,500 residents.

To do so, Mexican officials have said, efforts will be made to incorporate such towns into the productive activity of the country and promote nationwide industrialization. Jimenez Espriu explained that a similar program for towns with under 500 residents "we see as still far off in the future."

Regarding French joint participation in the "Morelos System," it was specified that France will collaborate in setting up ground stations which will cover the country, essential for sending and receiving the signal from one of the two satellites which will be placed in orbit in June 1985. The second, which will be launched into space in September of that year, will be "back-up" in the event that the first one fails to function.

Jimenez Espriu reported that the "Morelos System" will have exclusively domestic use and will serve in channeling communications. For example, practically all television will be sent to the rest of the country by satellite so as to leave the national microwave system for the telephone service.

9436

CSO: 5500/2024

BRIEFS

AIR STATIONS LINKED WITH INSAT 1B--Twenty-eight stations of All India Radio have been linked with the INSAT 1B for receiving programs relayed from Delhi. They include Aijal, Calicut, Cuttack, Gangtok, Imphal, Jullundur, Kohima, Leh, and Srinagar. Special equipment has been installed at the stations to receive the programs directly from the satellite. The programs will be fed through the Delhi earth station of the Post and Telegraph [PNT] Department. Till now these stations had been dependent on shortwave transmitters or the PNT earth circuits. Relay through satellite will help improve the reception. [Text] [BK100915 Delhi Domestic Service in English 0830 GMT 10 Dec 83]

INSAT 1B SATELLITE USED--The services of India's multipurpose INSAT 1B have been substantially made use of by the user agencies. The spacecraft combines the three functions of communication, meteorology, and television. Indian Space Research Organization sources said in Bangalore today that all the 36 earth telecom stations, including 2 of the Oil and Natural Gas Commission, have switched over to the spacecraft. The traffic is being gradually built up. Out of the first year's quota of connecting 2,000 telecom circuits, over 450 have been commissioned and are in commercial operation. The satellite is beaming 10 full earth images every day to meet the requirements of the Indian Meteorological Department. The first batch of eight data collection platforms are already working with the satellite. The second lot of platforms will be installed in February next. The number of platforms will be raised to 100 in a phased manner by the 3rd quarter of 1985. On radio network, all India Radio has brought in 28 of the 94 stations under the satellite. Although the satellite has a five-channel facility, it is being limited only to two channels originating from Delhi. The full five-channel facility will be utilized by the end of next year. [Text] [BK271029 Delhi Domestic Service in English 0830 GMT 27 Dec 83]

CSO: 5500/4708

OFFICIAL USE, CONTROL OF MEDIA EXAMINED

Islamabad THE MUSLIM in English 13, 14 Dec 83

[13 Dec 83, p 4]

[First article in "Media and Development" series by Anees Parvez]

[Text] THE concept of using communication to support development emerged out of the fairly distinct and in-depth journalistic developments of the 70's and has gained currency. Under the label of Development Support Communication (DSC), the mass media are viewed as key agents to inspire development from static, agriculture, primitive, rigidly ascriptive societies to dynamic, industrialised, urbanised, rational, socially mobile nation-states.

The aid in development, the goals of mass media must support the aims of the nation and be consistent with the each nation's development strategy. The International Conference on Communication Policies for Rapidly Developing Societies (Iran, June 1975), for example, agreed on seven objectives mass media should adopt to aid in development.

- (1) Determine the needs of people and give political credibility to the expression of those needs;
- (2) Provide Horizontal and vertical communication linkages at all levels of society. This requires a two-way broadcast system with feedback;
- (3) Raise peoples' awareness of development projects and opportunities;
- (4) Help foster attitudes and motivation that contribute to development;
- (5) Provide relevant information, for example, job and vocational information and consumer information;
- (6) Support economic development through increased use of electronic and computer innovations and performing arts;
- (7) Provide support for specific development projects and social services, including health care delivery, agricultural or vocational skills training, and public health, sanitation or family planning projects.

The Conference recommended clear cut communication strategies covering communication technology, institutional structure and a progressive set of policies to obtain optimum results from the aforestated objectives. Different sets of policies and programmes could be charted out by developing countries in the context of their particular conditions, particularly their levels of socio-economic development, income, literacy, urbanisation, technological progress and resource potential.

The Third World governments accordingly realised the effectiveness of communication as a potent instrument of development. In the early 70's the 'development support communication' was also broadened to include all communication applied to the speedy transformation of a country from poverty to a dynamic state of economic growth that makes possible greater economic progress and social equality and larger fulfilment of human potential.

Various government ministries, supported by the U.N. and other international agencies have subsequently encouraged creation of integrated national communication policies for tackling problems of poverty, population and health.

At independence, the configuration of urban, limited circulation media was in line with what has been identified as a 'transitional communications process' by Lucan Pye, one that was city-oriented and elitist in its nature and approach. In the period 1947-69 the press went through little qualitative change, although the number of publications increased. Dependence upon foreign news agencies for disseminating international news within Pakistan somewhat decreased with the development of local news agencies--Associated Press of Pakistan (APP) and Pakistan Press International (PPI). The APP wire service, controlled patronised and promoted officially, is better equipped, more developed and widely subscribed than the PPI, which is privately managed.

Print Media

The print media in Pakistan presently includes 115 dailies, 323 weeklies, 103 fortnightlies, 547 monthlies and 145 quarterlies--the total of all publications inclusive of daily newspapers being 1236.

Combined print media circulation is 2 million, however, readership is much more. Although data on total readership is not available it can be safely assumed that each printed copy changes four to five hands, sometimes more. The English readership is confined mainly to elitists.

In 1947 Pakistan had a fledgling broadcasting system confined only to radio and centred in three regional stations at Peshawar, Dacca and Lahore. A fourth station was added on the first independence anniversary in 1948 at Karachi. These stations all broadcast in the medium wave. It was only with the advent of the station in Karachi that one short wave transmitter was introduced to the broadcasting inventory of Pakistan. Continuing the tradition of the British, broadcasting is a State monopoly. Broadcasting facilities have expanded over the years for use of the rural population. The spoken word remains as the only medium available on wider scale in a country with 24 per cent literary rate, among the lowest in the world.

At present there are 15 broadcasting stations, 39 short wave (SW) and medium wave (MW) transmitters with total radiating power of 3,292 kilowatts.

The radio coverage on the short wave is 100 per cent within the country. Through medium wave signal 75 per cent of the area is covered. The total number of radio licences issued during 1981-82 was about 1.6 million. The number of radio sets in the use in the country was estimated to be about 3.5

million. The annual output of programmes through the operational transmitters was well over 53,000 hours in 1981-82.

The facilities are managed by the Pakistan Broadcasting Corporation. The PBC, popularly known as Radio Pakistan, was a government organisation till its conversion into a corporation on Dec. 20, 1972 under an act of the Legislature. The step was designed to ensure effective operation and growth of broadcasting as a function-oriented public service medium. The PBC, however, operates under direct official control.

Television

Like most of the developing countries, Pakistan entered the TV age in the early 1960s. Through legislative enactment in October 1963, a TV service was established. It was not conceived to be purely commercial or exclusively educational. The service was ostensibly geared into three broad categories: education, information and entertainment.

Pakistan signed an agreement with the Nippon Electric Company of Japan and in 1964 set up two experimental television centres at NEC's own cost and risk. In the period between 1967 and 1983, the equity of all the foreign companies was taken over by the Government of Pakistan which today is the sole owner of Pakistan Television.

The area and population covered by the five broadcasting centres is 41 per cent and 79 per cent respectively. By 1987 the TV signal will cover 93 per cent of the population and 51 per cent of the area through commissioning of three re-broadcast centres and setting up of three SHF links.

The entire country is linked by a microwave system and nationwide TV viewing is possible on a permanent basis. Pakistan also has international TV links with communication satellites. The ground receiving station at Karachi is used both for inward and outward TV signals. Use of this new communication technology is minimal because of high costs. Its use is restricted to sports events of international significance and pilgrimage activities from Makka. The outgoing programmes cover visits of heads of states to Pakistan, international conferences held in the country and sports events.

PTV transmits programmes seven days a week for approximately six hours a day. About 78 per cent of the programmes are locally produced and the rest imported from U.S. and British networks. The imported programmes are very popular with the urban audience. At least one hour of English programmes is broadcast each evening.

The estimated number of TV sets on June 30, 1980 was 937,500 with an average viewership of 7,500,000. Colour transmission began in December 1976. At present a 20" colour TV set costs about \$760 which roughly equals five months' salary of a middle category public employee.

Film

In the film sub-section, the scene is not very encouraging either. The total number of cinema houses in the country is 578 with 0.3 million seats, frequency of use being 3.8 per year. The annual production of films averages 100-120 mainly in Urdu, Punjabi, Sindhi and Pushto languages at the existing 12 film studios mostly concentrated in Lahore. In addition, 70-80 foreign films in English are imported from USA, U.K. and Italy for exhibition in the Urdu cinema houses.

A Central Board of Film Censors with headquarters at Islamabad and branches at Lahore and Karachi examines all feature films, trailers, advertisement shorts and documentaries before certifying them for public exhibition.

Government Role

The Ministry of Information and Broadcasting at the federal level formulates and implements national media programmes and policies. Headed by a Cabinet Minister, the Ministry is composed of different departments and semi-autonomous corporations/organisations.

Pakistan National Centre, through a chain of centres located practically at all district headquarters in the country, serves as an effective forum for intellectual discussion on national/international problems.

Directorate of Films and Publications produces material on matters of national import, besides publishing standard periodicals in English, Urdu and Persian. The Film Section of the Directorate prepares regularly newsreels on significant events and documentaries on socio-cultural life of the country. The output--both in print and vision--is distributed/released in Pakistan as well as abroad through Pakistan missions.

The Directorate of Research and Reference undertakes research projects on national issues.

The External Publicity Wing feeds the international media through its information sections in Pakistan missions abroad.

The Economic Publicity Cell coordinates projection of the country's economic policies.

The Audit Bureau of Circulation checks and maintains circulation movements of print media.

[14 Dec 83, p 4]

[Second article in "Media and Development" series by Anees Parvez]

[Text] It is, perhaps, instructional at this stage to look into the nature and value of government-media interaction. According to the Press Independence and

Critical Ability survey conducted in 1966 on world-wide basis by the Freedom of Information Centre of the School of Journalism, University of Missouri, Pakistan is classified as transitional (one among the ten countries of Europe, Africa and Asia put in this category).

The term denotes a semi-free condition of a country either in relation to its press or in relation to its politics. The PICA survey indicated that no nation will long remain half-free. The definition of "transitional" adopted in the survey is rooted in in-depth research findings establishing subtly direct correlation between press freedom and political democracy. In the words of Axel Springer, a West German publisher, "We recognise a tyranny not only by the fact that its subjects are denied free elections, but also by the fact that they are denied a free press".

In Pakistan, press did enjoy some amount of freedom in the 1947-58 period ending with the first imposition of martial law. But it does not mean that during this period the press went unfettered. The government held instruments of suppression in the form of an administrative framework, inherited from the British colonialists, that combined judicial and highly centralised control over press operations. The Pakistan Public Safety Act, the West Punjab Safety Act of 1949 and the Security of Pakistan Act of 1952 made the Government the sole judge of what was prejudicial to the defence and security of Pakistan with power to strangle a newspaper if it so desired. In the three years between 1950 and 1953 ten papers were banned for periods ranging from three months to one year.

It was, however, the 1958 martial law in which the Press and Publications Ordinance of 1963 confused criticism with subversion and prescribed brutal penalties for 'errant' organisations of public opinion. Then a dozen papers were hitched to a multilingual govt. trust (National Press Trust), and the leading news agency in the country (Associated Press of Pakistan) was labelled as 'official'. On top of all this, the TV was hastily set up to add a new dimension to the image building of the 'Asian de Gaulle'.

The White Paper on Misuse of Media by the Bhutto Government points out that in a span of five years Bhutto closed down over three dozen newspapers and periodicals and sent about a dozen journalists to jail. This was a new record of crimes against the press in his new Pakistan.

Besides legal power and executive tactics, the government possessed other weapons to control the press. These included its control of newsprint and media dependency on government advertising. Newspaper circulation being limited coupled with high printing and management costs, dependence on government as chief source of advertisement revenues and exclusive supplier of newsprint rendered it extremely difficult for the newspapers to dare go non-conformist. The government gives advertisements valued at between six hundred thousand and seven hundred thousand rupees a month (between 72 hundred thousand and 84 hundred thousand a year) to newspapers other than those belonging to the National Press Trust.

The Zia government's approach to press freedom is claimed to be a "down-to-earth policy".

"So in this country of yours and mine, where there is lack of political maturity, where there is a lesser realisation of social responsibilities and whose civic freedoms are circumscribed, you cannot think of a freedom of the press that borders on license.....In this day and age we have accepted the stigma of occasional self censorship or silent censorship because of the main reason that newspapers, quite oblivious to the present stage of our evolutionary process hanker after something which is alien to our psyche".

By all accounts, the mass media in Pakistan are at a basic developing stage. Increasing attention is being given to their development, especially in recent years, to bring them at par with the minimum standard set by UNESCO of 10 newspaper, 5 radio sets, 2 television sets and 2 cinema seats for every 100 persons. Official figures in Pakistan show that 1.9 copies of newspapers, 4.8 radio sets, 0.7 television sets and 0.6 cinema seats were available for every 100 persons. This set of figures is even below the average for the South East Asian region.

Media for Development

Despite the thin spread of the media, newspapers, film, radio and TV have been used for development support communication (DSC). As newspapers and films are mostly owned by the private sector, their use for this specific purpose has not been organised systematically and consistently. On the other hand, radio and TV, because of their state ownership, and as advised by the UNESCO has been consciously employed for DSC for a long time.

Since 1953, radio in Pakistan broadcasts a series of instructional programmes for rural audiences to improve their productivity. At the recommendation of UNESCO, the school broadcast programme was started on a regular basis in June 1953. It was reorganised in 1975. Secondary schools were equipped with additional receiving sets and a new suitable broadcast time schedule was chalked out. The broadcast pack consists of (a) enrichment programmes generally of an informative nature, designed to promote the level of awareness and motivation among the students, (b) instructional programmes for classes 'I to X on the basis of syllabi of basic school subjects. In addition, a 10-minute adult literacy functional programme is transmitted from three major radio stations in collaboration with the Peoples Works Programme and the Open University.

The Pakistan Broadcasting Corporation also airs about 400 hours of programmes, sponsored by the national Open University, annually on courses designed to improve knowledge and technical know-how of rural listeners. The Open University-aided instructional programmes have reportedly expanded to three hours a day since last year.

In 1966, 30-to-90-minute daily "farm forum" programmes were introduced over five of the major radio stations. The duration was extended to six hours daily in 1972-73 to cater to the needs of the farming community in its day-to-day problems providing guidance in the adoption of modern agricultural practices. The programme production teams visit villages and make on-the-spot recordings of people working in the fields. They also evaluate impact on the programmes and provide feedback to the programme planners.

A weekly programme was started for women in 1948. Since 1975, its duration has been increased to half an hour per day. It covers talks, features, discussions, skits and music. Subjects such as child psychology, domestic economy, career opportunities for women and the role of women in a developing society are highlighted, though inadequately.

Radio is being extensively used for DSC objectives. The total programme time devoted to this category is 40 per cent of the overall programmes transmitted.

Education: The Aim

The DSC programmes telecast by PTV comprise both formal educational and non-formal programmes. They aim at educating the public on government policies and national development and include subjects like economic development, national affairs, health and sanitation, population planning, agriculture and farming, civic duties and traffic education etc.

PTV started adult literacy programmes in 1975. A pilot project was launched in Punjab on a selective basis. It aimed at imparting functional literacy combining social and vocational education to 12,000 females and an equal number of males in about six months time. Tele-lessons, each of 45-minute duration, were transmitted twice daily from the Lahore centre. In the afternoons, a programme was telecast for 210 community viewing centres in rural areas of Lahore, Rawalpindi, Peshawar and Karachi on the micro wave link. The programme proved to be a big success. As a result the number of viewing centres, equipped with television sets and part-time tutors and teaching aids, was increased to 856 in 1982.

The tele-lessons are intended to improve agricultural and industrial skills of the course participants and also to promote improved response to the programmes in the fields of community development, health and population planning. During 1980-81, 156 half-hourly lessons were telecast to give basic education to 50,400 participants at the rate of two programmes six days a week.

A national Open University was established in 1975 to extend non-formal education to the people through the use of mass media, particularly radio and TV. Its programmes include 7-hour daily lessons from all the five TV stations during the current year 1982-83. Presently, the total non-formal programmes sponsored by the University run into 1.5 hours daily.

There is no denying the fact that in the modern age the role of television as a catalyst of socioeconomic change cannot be underestimated. But in a situation where the reach of TV is limited due to resource constraints, the cost benefit ratios turn out to be unfavourable. Another drawback is the lack of co-ordination and centralised planning at the government level in the use of the medium by various competing agencies and departments. There is no clear cut policy to strike a satisfactory financial arrangement by the using departments to pay production and transmission costs.

Success

In spite of limitations, media have yielded encouraging results especially in boosting development in the agriculture sector. The repetitive media message created a growing realisation among Pakistan's farming community that it had a vital role to play in building the national economy on which rested its own welfare. Instructions were given as how to increase production by checking avoidable wastes and judiciously using water resources and other scarce inputs. The awareness was one of the key factors that turned the official policy package into a remarkable success enabling the country to achieve self-sufficiency in wheat. This is only one instance which can be multiplied across the whole spectrum of the nation's socioeconomic life. The possibilities are immense.

CSO: 5500/4707

BRIEFS

OFFICIAL ON SPACE OBJECTIVES--KARACHI, Dec. 3: The Chairman of the Pakistan Space and Upper Atmosphere Research Commission (SUPARCO), Salim Mahmud, said Pakistan's space research programme was geared to meet national needs, and not to get involved in a race with anyone. Addressing the probationers attending the third specialised course at the Foreign Service Training Institute in Islamabad, the Chairman said very rapid developments in the field of space technology had been witnessed in the last two decades, according to a SUPARCO Press release issued here today. Mr. Salim gave a detailed background of the objectives, priorities and work of his organisation's space research in Pakistan. Developments in space technology, he said, had already transformed the quality of life on earth. Talking on the subject of communication satellites, he mentioned the building up of pressure on the geostationary orbit--a unique orbit at an altitude of 22,300 miles above the equator. There is a rush to fill this orbit, he said.--APP [Text] [Islamabad THE MUSLIM in English 4 Dec 83 p 8]

CSO: 5500/4707

REPORTAGE ON BOPHUTHATSWANA, SWAZI TELEVISION TRANSMISSIONS

Bophuthatswana Broadcasts Schedule

MB290911 Johannesburg International Service in English 0630 GMT 29 Dec 83

[Text] Africa's newest television station, Bophuthatswana Television, will be on the air on schedule on Saturday evening. The first program will be a short religious broadcast by President Lucas Mangope. Initially, about 90 percent of the programs will be in English, because of a shortage of facilities to dub them into other languages such as Tswana. The station will cover most of Bophuthatswana, and parts of South Africa in the Johannesburg and Pretoria areas. Coverage will be increased later with the assistance of the South African Broadcasting Corporation.

Station Begins Broadcasting

NC011402 Paris AFP in English 1400 GMT 1 Jan 84

[Text] Johannesburg, 1 Jan (AFP)--The South African "homeland" of Bophuthatswana has become the first homeland to have its own television channel.

Bop-TV began broadcasting last night from the capital, Mmabatho. Most of its programmes will be in English and purchased overseas.

Bophuthatswana is one of four homelands declared "independent" by the Pretoria regime, although no other country recognises them as such.

It has 2.5 million inhabitants, but its division into seven separate parcels of land means some white South Africans will also be able to receive the programmes, as will residents of the Black Johannesburg suburb of Soweto.

The new channel, which is owned by the government but will receive some of its income from advertising, is costing 30 million rand (25 million dollars) to set up.

The South African press has published details of the kind of aerial needed to receive Bop-TV, which will give viewers an alternative to TV programmes transmitted by the state-controlled South African Broadcasting Corporation (SABC).

However, the SABC told people to be wary about spending up to 150 rands (125 dollars) on an aerial because reception outside the designated areas might be only temporary.

Press reports have commented it will be interesting to see whether Bop-TV will criticise the South African government. The liberal English-language daily the RAND DAILY MAIL said that if Pretoria banned such programmes, it would show that the "independence" of Bophuthatswana was artificial.

SABC Swazi Service Begins

MB020600 Johannesburg Domestic Service in Afrikaans 0830 GMT 1 Jan 84

[Text] The South African Broadcasting Corporation's Swazi service began direct transmissions from Nelspruit this morning. Radio Swazi now broadcasts from Nelspruit every morning from 0500 to 0930, and from Pretoria every night from 1930 to 2230. The service is to be extended later in the year. Radio Swazi was inaugurated on 1 April 1982.

CSO: 3500/33

BRIEFS

HYBRID CIRCUIT BREAKTHROUGH--High-tech firm Spescom claims a breakthrough for South African technology with a complex hybrid circuit it developed for MSN Products. Spescom MD Mr Tony Farah said the task was to fit a mixed digital and analogue circuit into a restricted space. "The original circuit occupied a complete Eurocard of 100 by 160 mm, while the hybrid micro-circuit occupies only 25 by 60 mm. "This development has pushed South African micro-electronics to new limits." The new circuit would help make Spescom more competitive locally and overseas. The firm set up a subsidiary at Irvine, near Los Angeles, at the beginning of this year to explore the market for South African products, and also maintains close contact with Europe. Mr Peter Wilson, MD of MSN Products, whose engineers were also involved in the development of the micro-circuit, said it consisted of two multi-layer ceramic substrates assembled back-to-back. "This gives a total of nine layers of circuit with components on both sides of the package. "We were able to use plastic-encapsulated digital circuits as well as many other discrete active and passive components, resulting in a hybrid of moderate cost." [Text] [Johannesburg THE STAR in English 5 Dec 83 p 13M]

CSO: 5500/30

JAPANESE OECF LOAN AGREEMENT FOR MICROWAVE RELAY PROJECT SIGNED

Lusaka DAILY MAIL in English 9 Dec 83 p 7

[Text]

TOKYO. — Zambia has signed a loan agreement with the Japanese Overseas Economic Co-operation Fund (OECF) for a microwave relay project to cover the Copperbelt, Northern, Eastern and Luapula Provinces.

Zambia's Ambassador to Japan, Mr. Axon Chalikulima signed on behalf of the Zambian Government, while chairman of the OECF, Mr. Takashi Hosomu signed for his government.

The project will include replacement and improvement of performance of over-aged microwave radio system between Lusaka and the Copperbelt and the multiplex channel expan-

sion for the Lusaka-Copperbelt route.

Other works will include extension of television signal microwave to Mansa and construction of the rural microwave telecommunication in Northern, Luapula and Eastern provinces.

When completed, the project will help improve communications in the country and will afford people of Mansa a chance to watch television.

At the signing ceremony, Mr. Hosomu said he hoped the loan would go a long way in improving and strengthening the existing warm relations between the two countries.

CSO: 5500/29

BRIEFS

TV, MICROWAVE LINKS--Improved microwave links and television facilities will next year be extended to Luapula Province following the signing of a 2 million kwacha agreement between post and telecommunications and Nippon Company of Japan. The concluded agreement will connect (Imasa) to the Kasama microwave link and also rural radio telephone in the northern and eastern provinces. Post and Telecommunications Corporation director general, Philimon Ngoma, said the agreement had been made possible by a loan to Zambia by the Japanese Government. Mr Ngoma said it was his corporation's wish that the people of Luapula Province should have television facilities like people of other provinces. [Text] [MB290627 Lusaka Domestic Service in English 1800 GMT 28 Dec 83]

CSO: 5500/34

UN ACTION TO REGULATE DIRECT INTERNATIONAL SATELLITE TV BROADCASTS DESCRIBED

Moscow ARGUMENTY I FAKTY in Russian No 43, 25 Oct 83 p 8

[Question and answer]

[Text] The problem of the mastery of space is a global one that excites all mankind. The precise way in which people will use outer space will determine the fate of civilization on our planet. And yet it is completely obvious that imperialism, and primarily American imperialism, in its impossible striving to achieve military supremacy over our country, is giving an important place to the militarization of space. Simultaneously with this, proposals are being made for using television broadcasts by way of satellites to other countries, and this, essentially speaking, is interference in their internal affairs.

In this regard I would like to know what documents have been used in the United Nations to ban such activities, and what the position of our country is with regard to this question.

N. Kalyagin, Moscow

Obviously, the problems of the use of outer space exclusively for peaceful purposes are much broader than simply the prevention of the militarization of space. In the aspect of banning the use of force or the threat of using force in space, it is also necessary to consider the question of preventing the use of direct television (DTV) for the waging of "psychological warfare."

Direct TV broadcasting can be carried out by means of satellite relay stations that radiate a signal of rather large capacity so that it can be received directly by television sets, bypassing ground-based reception centers, where the signal is usually amplified for the purpose of subsequently disseminating it for individual reception. The use of this method of television broadcasting opens up broad opportunities for cultural exchanges on a worldwide scale, but also creates a number of problems.

A special UN working group of experts which was created by the UN Space Committee came to the conclusion that, when carrying out DTV, international problems of a political, economic, social, cultural, and legal nature can arise. This is linked with the fact that TV is today the most powerful and most effective means of forming public opinion and exerting an active influence upon the political philosophy, views, tastes, and habits of the population.

DTV can be used to broadcast programs to foreign territories, and those countries will be incapable of monitoring or regulating the dissemination on their territory of the information that arrives over that channel. Thus, we are dealing with the uncontrollable penetration, by means of DTV, into the confines of another country's jurisdiction and sovereignty, and this, under definite circumstances, can lead to sharp contradictions among the countries, inasmuch as, under present-day conditions, DTV can be used by the reactionary forces as a weapon of ideological subversion and provocation.

Attempting to guarantee the conditions under which space communication would exclusively serve the purposes of peace and the development of friendship among nations, the Soviet Union in 1972 made the proposal at the United Nations concerning the development of the principles of international law as applicable to direct television broadcasting, which proposal was transferred to the UN Space Committee for consideration.

The Soviet draft, which is based on generally accepted principles and norms of modern international law, stipulates, in particular, that the DTV must be carried out in the interests of the peace, progress, and cooperation of all countries for the purposes of raising the educational and cultural level of the population; all countries, without any discrimination whatsoever, have the right to carry out DTV and to enjoy its blessings; countries are obliged to refrain from broadcasts that can harm the cause of universal peace, that can encroach or interfere into the internal affairs of a state or its authority, that can inflict harm on international cooperation, or that has an anti-humanitarian nature; the government bears the responsibility for all the national activities on DTV irrespective of whether they are carried out by governmental agencies or by nongovernmental organizations or juridical persons; the governments which feel that the DTV broadcasts violate their interests can counteract them within the confines of their jurisdiction and beyond its limits, including space. The Soviet draft also contains a principle according to which DTV to a foreign country can be carried out only with the clearly expressed consent of that country.

The overwhelming majority of members of the Committee are in favor of the inclusion of that principle in the document being prepared by the UN Space Committee. That Committee includes representatives of all the socialist and developing countries, as well as many of the capitalist countries.

The United States has proven to be practically the only country that is opposed to this proposal. At the same time in the concluding report of the 2nd UN Space Conference in Vienna it was noted that DTV can become a real fact in the most immediate future, inasmuch as the technical capabilities already exist for this and in a number of countries the appropriate experiments are being carried out. The 37th Session of the UN General Assembly on 10 December

1982 adopted the "Principles for the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting." This time also the United States voted against it.

The UN General Assembly has acknowledged that activities in the area of international DTV must be compatible with the principle of noninterference in the internal affairs of sovereign countries, with the development of mutual understanding and the reinforcement of friendly relations and cooperation among all states and peoples in the interests of the maintenance of international peace and security. It also emphasized that all the states have equal rights to carry out DTV and to enjoy its blessings.

5075

CS0: 1807/37

TASHKENT HOSTS INTERNATIONAL COMMUNICATIONS CONFERENCE

Rashidov on Uzbek Economic Successes

Tashkent PRAVDA VOSTOKA in Russian 6 Sep 83 pp 1,2

[Speech by Sh.R. Rashidov, candidate member of the CPSU Central Committee Politburo, first secretary of the Uzbekistan Communist Party Central Committee and member of the USSR Supreme Soviet Presidium, at the opening session of the Intergovernmental Council of the International Program for the Development of Communications in Tashkent, 5 September 1983]

[Text] Respected participants and guests at this session of the Intergovernmental Council of the International Program for the Development of Communications!

Ladies and Gentlemen!

Comrades and Friends!

On behalf of the Soviet government allow me to welcome you to the Soviet Union and to express our deep satisfaction that the Intergovernmental Council of UNESCO'S International Program for the Development of Communication decided to hold its regular session in Tashkent, the capital of Uzbekistan.

Tashkent has frequently been the site of international events devoted to various areas of human knowledge and culture. Four years ago a seminar of journalists from the developing countries was held in Tashkent with UNESCO participation, and we have already had the pleasure of welcoming some of the participants in today's meeting.

Once again we are pleased to see representatives of UNESCO member countries in the ancient and eternally young Uzbek land, in one of the republics of the Soviet Union. We hope that this time, too, you will succeed in working fruitfully and well, in discussing questions related to the development of the means of information and communication in the present-day world.

We sincerely wish you great creative success, good health, excellent spirits, much joy and a pleasant visit in our republic's capital, in a city which is now celebrating its glorious 200th anniversary.

Tashkent today is a major industrial, cultural and scientific center in the Soviet East. It is a city with two million residents. Its industrial side is made up of 70 branches of the economy. There are 200 major associations and enterprises here producing one-fifth of Uzbekistan's industrial output, which goes to 70 countries of the world. Located in the city are the republic's Academy of Sciences and 113 scientific-research and planning and design organizations; 100,000 specialists who hold diplomas from higher educational institutions form the scientific and engineering "corps" of Tashkent.

Tashkent today has 19 higher educational institutions, 320 general education schools and 36 specialized secondary schools, more than 300 medical institutions, 12 theaters, 4 concert organizations, 3 film studios, 9 museums and more than 200 mass circulation libraries.

When the city was devastated by a terrible earthquake in 1966, the entire country came to Tashkent's assistance; all the Soviet people extended a faithful hand of friendship and fraternity to the city.

"The strength of a bird in flight, is the force of a man in friendship," says the folk wisdom. Blocks of the new Tashkent, and its architectural complexes have become evidence of the generous assistance, friendship and fraternity of the Soviet people.

In the Soviet Union there is a great deal of understanding and sympathy with the legitimate aspiration of the liberated countries to change the existing unfair situation, to create their own firm and effectively operating infrastructures for communications, to acquire full sovereignty in questions of information and culture and on this basis to achieve the establishment of a new international information order.

It is of particular satisfaction that the Tashkent session of the Intergovernmental Council of the International Program for the Development of Communications (IPDC) is being held during World Communications Year. In making its decision to declare 1983 as World Communications Year, the UN General Assembly pointed out the important role of the communication and information media in the economic, social and cultural development of all countries of the world. The basic purpose for

holding the world year lies in the persistent need to promote the accelerated development of national systems of communication and mass information. This concerns mainly the developing countries of Asia, Africa and Latin America, which have communication and mass information systems which significantly lag behind those of the industrially developed countries of the world in terms of their developmental level and work volume.

In March of this year the capital of India was the site of the 7th conference of heads of states and governments of the non-aligned countries. It was gratifying that at the Delhi conference, as at other conferences and meetings conducted within the framework of this powerful political movement, there was detailed discussion of issues which come within the sphere of interests of the International Program for the Development of Communications. The political declaration adopted in Delhi expressed the resolve of the non-aligned states to continue active efforts "in the cause of the decolonization of information and opposition to the biased treatment of events and to mass media campaigns aimed against the non-aligned countries and national-liberation movements."

The conference participants approved the large amount of work which is being carried out under the aegis of UNESCO on the development of recommendations and plans in the area of the development and consolidation of national systems of communications and mass information, the elimination of imbalance in the flow of information, and the achievement of participation--with equal rights--in the international exchange of information.

The mass information media have an exceptionally great and responsible role to play in international relations, in the establishment of mutual understanding and cooperation among peoples and in the struggle for peace and the relaxation of international tension. This question worries world public opinion, and it is being widely debated at various international, regional and national conferences, meetings, debates, symposia and through informal contacts.

The question of peace and the struggle for disarmament and the elimination of the threat of nuclear war has become the most burning and topical question of the present day. There has been a sharp increase in the activity level of the aggressive forces, which have openly declared a policy of working to achieve military superiority and of unleashing an arms race unprecedented in its scale; these forces are using any and all means in their attempts to turn back social development.

Never in the post World War II period has the international situation been so alarming and dangerous.

The Soviet leadership is making enormous efforts to prevent the outbreak of a nuclear world war. We are firmly convinced that the debate between the various world social systems should not be resolved by military means.

As Comrade Yu.V. Andropov, general secretary of the CPSU Central Committee and chairman of the USSR Supreme Soviet Presidium, emphasized, "the attempt to resolve the historical debate between these systems by means of a military confrontation would be disastrous for mankind... We are striving for fundamental improvement in international relations and for the consolidation and development of all good foundations for these relations. We will work to achieve respect for the sovereign rights of states and peoples, as well as the strict observance of the principles of international law, which imperialism is attempting to cast aside and trample upon with increasing frequency."

As is well known, in 1978 the 20th session of the UNESCO General Conference adopted a declaration regarding the basic principles which concern the contribution of the mass information media to the strengthening of peace and international mutual understanding, as well as to the struggle against racism, apartheid and incitement to war.

Experience shows, however, that by no means all of the provisions of this very important document are being implemented. Some Western organs of mass information, which cover themselves with the slogan about the freedom of the press, approve and publicize the arms race, and in essence they support adventurist plans to prepare for nuclear war. There has been a noticeable increase in the propaganda campaign against the national-liberation movements, against many of the developing countries of Asia, Africa and Latin America, and especially against those of them which are actively implementing socioeconomic transformations.

Unfortunately, the world has forces which utilize the enormous potential of the mass information media to worsen relations between states rather than to improve the international atmosphere; they set one people against another and hinder the return of world events to the mainstream of detente. "A reduction in the military threat," noted the leaders of the European socialist nations in January 1983, "is impossible unless a climate of trust is created in the relations between states. This requires--in addition to the development of political dialogue and the adoption of appropriate measures in the economic and military areas--the dissemination of true information, the rejection of claims to great-power status, the refusal to spread propaganda for racism, chauvinism, and national exclusiveness, as well as the rejection of attempts to teach other peoples how to

arrange their own lives, to teach violence or to fan military psychosis."

What is important is not just how much information flows, and through which channels, where to and where from, but also what kind of information (with regard to its content) is disseminated beyond state boundaries and for what purpose. Neocolonialism in the information sphere is just as unacceptable as in other spheres; it is condemned by nations, as are militarism, racism and apartheid. For this reason international information is a timely sphere for activities which require the development of international-legal regulation and of the guarantee of the right of all states to participate in the exchange of information.

In the 70's the world saw the development of a movement to establish a new international economic order. It drew the attention of the community of nations to the unequal exchange taking place between the developed capitalist countries and the liberated states not only in the sphere of economics but also in the sphere of culture, informational activities and communications. The problems of information dissemination which had developed and required solutions showed the groundlessness of the "free flow of information," which is correctly called a street with one-way traffic. This practice has led to a situation in which powerful national corporations in the developed capitalist countries today largely continue to control and regulate the flow of news going to and between the developing countries.

There is no doubt that the new international information order cannot be established, as the documents of the first session of the International Program for the Development of Communications, which took place in June 1981 in Paris, emphasized "until national systems are created which are completely capable of taking part as 'equal partners' in the global exchange of information and knowledge."

On the other hand, in our opinion, the International Program for the Development of Communications should not be viewed as a program aimed exclusively at the improvement of the developing countries' potential with regard to the obtaining and developing of information and communication technology. As Mr. Amadu Makhtar M'Bou, general director of UNESCO, correctly noted at the opening of the second session of the Intergovernmental Council of the International Program for the Development of Communications in Acapulco on 18 January 1982, "we need to make joint efforts aimed at ensuring that the communication media make a growing contribution to the cause of developing mutual understanding and mutual respect among peoples, as well as to the cause of promoting general progress within the framework of the particular society of each of these countries."

Of course, it is essential to take a careful attitude toward cultural uniqueness and to respect the traditions and customs of the peoples in those countries in which measures of the International Program for the Development of Communications are already being carried out or will be carried out. It is essential for all plans of the International Program for the Development of Communications, both at the international and regional levels, as well as at the national levels, to be closely coordinated with the plan for the socio-economic and cultural progress of the developing countries.

The achievements of scientific-technical progress, of creative intelligence and technological thought must become the property of all the people on the planet; they must serve the general good of mankind. The technical means for the transmission of information may be an export article; they may be imported or exported like any other commodity, but the actual organs of the press, radio and television--and we are convinced of this--must be established as units of their own unified national information system, and they must not serve as tools for interference in the internal affairs of other countries. Every state has an inalienable right to develop this kind of information system. We see in this one of the most important preconditions for the establishment of the new information order.

A news exchange--based on equal rights--between peoples is possible only if the information sovereignty of all countries, large and small, and of all nations is ensured, and if they are protected against attempts to make them dependent for information on foreign states which are more powerful in the economic and technical areas. That is why it is so essential for the process of the formation and development of national networks to be based on the principles of international cooperation declared by the UN and UNESCO.

Important documents which were recently approved by UNESCO testify to this international organization's concern for the existing inequality between certain countries and groups of countries in the establishment and dissemination of information. They also indicate the concern of a majority of UNESCO member states to make the mass information media serve peace and progress.

Since the birth of the idea that there should be a change in the existing situation in the international information exchange and that colonialism in this area should be eliminated, it is UNESCO which has joined most actively in the work of providing for the new international information order. We place a high value on the fact that over a number of years the respective UNESCO programs have been aimed at contributing to a more even

exchange of information among the developed and developing countries.

These UNESCO activities in the development of mass information media have already yielded significant fruits. However, there is even more to be done, and we reject the attempts of those who want to exclude this international organization from participating in the resolution of the most important communication problems.

Since the very beginning the USSR has supported the establishment of the International Program for the Development of Communications, and its conversion into an effective mechanism for aiding the development of information and communication systems in various countries and regions of the world. We have pledged a significant contribution to the account of the IPDC, and we have offered our services in the form of experts, equipment, and scholarships for students to study at higher educational institutions in the USSR. In accordance with UNESCO recommendations, we have granted press agencies in the developing countries special rate reductions for the transmission of their information. And in the future we will continue to extend aid and support to UNESCO and the International Program for the Development of Communications in the implementation of their high goals.

At the same time we think that success in overcoming the backwardness of the developing countries in the area of mass communication, and in establishing a new, more just and effective international information order depends as well on how active and purposeful their own efforts are. In this regard I would like to share with you the experience which we have gained here in Uzbekistan in solving those problems which today concern a majority of the developing countries.

Before October 1917 Uzbekistan, as is well known, like all of Turkestan, was a colonial outpost of tsarist Russia. In order to put an end to the patriarchal backwardness and difficult heritage of the past, gigantic efforts on the part of the entire country were necessary, including the help and fraternal support of all the peoples and the consistent implementation of the Leninist national policy; it was necessary to eliminate exploitation and violence, to put an end to the inequality of national groups.

Our ascent to today's heights of human progress were unbelievably difficult. V.I. Lenin and the party of communists led by him took the special conditions of Central Asia into account. With this knowledge they worked out a plan of socialist transformation. In accordance with the Leninist plan for building socialism, the party set out the specific tasks which, when solved, would ensure

that the peoples of the Soviet East were drawn into socialist construction.

Within an historically short period of time land and water reforms were implemented, agriculture was collectivized, industrialization and a cultural revolution took place in our republic. In short, a colossal amount of work was done to ensure the actual equality of the Eastern peoples, to eliminate the economic and cultural backwardness of outlying national areas of the country. The national question, in the form in which it was left to us by an exploiting system, was resolved definitively and irreversibly in our country.

Prerevolutionary Central Asia was characterized by the presence of an insignificant number of factory-plant enterprises engaged mainly in the primary processing of agricultural output. In a land where cotton growing was the main sector, not even textile factories were being built.

According to a prerevolutionary reference book, this is what Tashkent's industry, for example, consisted of at that time: "vodka distilleries--3, tanneries--15, creameries--7, brickworks--4, soap factories 2, joining-carpentry shops--2 and photographers' studios--6."

Today's Uzbekistan is a highly-developed Soviet republic with modern industry, mechanized agriculture, advanced science and culture. The republic now has more than 1,600 major enterprises. Uzbekistan's industrial potential combines energy, machine building, major chemical enterprises, electronics, the building industry, light industry and the food industry and aircraft construction, that is, nearly 200 sectors of the economy.

In the Union-wide division of labor Uzbekistan is the country's only producer of cotton-picking machines and other equipment for cotton growing. The republic's working class includes more than 3 million people. In the current year the volume of industrial production reached nearly 20 billion rubles.

Vast transformations have taken place in agriculture. Here are two figures for comparison. In 1922 Uzbekistan gathered 37,400 tons of "white gold," and today the republic is fighting to provide the country with more than 6 million tons. This figure has already become a norm for us. In the near future we are planning to bring grain production up to 5 million tons and fruit and vegetable production up to 10 million tons. The procurement of animal-raising output will increase sharply.

Our achievements are the result of the friendship, mutual assistance and close cooperation of all the Soviet peoples; they are the result of the wise leadership of the Leninist party. As the

Eastern proverb says correctly, if peoples come together, they can scale mountains.

Within the friendly Soviet family, the working people of Uzbekistan have been able to enrich their culture with the achievements of contemporary world civilization, with the spiritual values of socialism and the experience of other fraternal peoples.

In order to present even more clearly the vastness of our accomplishments in the realm of spiritual life, I remind you that at the end of the last century Turkestan had a total of one newspaper with a circulation of 500-600. And it was impossible to look for any more because of every 100 people in the local population only two were able to read and write.

At the present time the republic has 287 newspapers, including 16 republic papers, 26 oblast papers, 10 city papers and 166 rayon papers; it also has a high number of newspapers published in large editions, as well as 75 magazines and publications of journal type. The circulation of these publications amounts to more than 10 million copies. Newspapers are published in the Russian, Kazakh, Tadzhik, Tatar and Karakalpak languages, as well as in Uzbek.

Radio and television bring a large volume of information. There is virtually no area in Uzbekistan in which radio and television broadcasts are not received. In the near future a new 375-meter television tower will go into operation in Tashkent; it will make it possible to produce regular programs on five channels. It is worth noting that there is not a family in the republic which does not have a television set.

The republic information agency has powerful means not only for collecting, receiving and transmitting literary and photographic information. In a year it prepares and broadcasts in various languages about 1,000 printer's sheets of reports of various kinds, and it also prepares information for transmission to foreign countries.

In Uzbekistan, where manuscript book writing developed a thousand years ago, a powerful printing base has been established; this base makes it possible to publish more than 50 million copies of books and pamphlets every year. The republic has 10 book publishing house in operation.

A division of the "Raduga" publishing house has been established in Tashkent. It acquaints foreign readers with the works of Soviet writers of many nationalities, as well as with classics in the Arabic and Persian, Hindi, Urdu and Dari languages.

The total number of all books and pamphlets published in Uzbekistan during the years of Soviet power has already gone beyond the billion mark. We have a per capita book consumption of 5-6 per year.

We are striving for a situation in which the materials of Uzbekistan's mass information media, like those of the entire country, truthfully and reliably deal with the most varied phenomena of life, serve the goals of progress and the improvement of the moral and political climate in the world, help us to better understand one another, and speak out decisively against lies, disinformation and provocations in international affairs.

The worker and rural activists of the press help our newspapers, radio and television to be sensitive to everything new, and to be on top of all events. The creative cooperation of the mass information media with the on-site correspondents, who work actively with professional journalists, make it possible to deal more accurately with important life problems.

Sh.R. Rashidov read out greetings from the USSR Council of Ministers to the participants in the 4th session of the Intergovernmental Council of UNESCO'S International Program for the Development of Communications.

Stukalin on Cooperation in Communications

Tashkent PRAVDA VOSTOKA in Russian 6 Sep 83 pp 1,2

[Speech by V.F. Stukalin, USSR deputy minister of foreign affairs and chairman of the USSR committee on UNESCO affairs, at the opening session of the Intergovernmental Council of the International Program for the Development of Communications on 5 September 1983]

[Excerpt] In our opinion, it would be extremely important for the mass information media to bring to their readers, listeners and viewers the open, honest position of the Country of the Soviets. Not the myths about the "Soviet threat," but rather the genuine aspiration--dictated by the very nature of the socialist state--toward peace and international cooperation--that is how the Soviet Union's foreign policy is characterized.

In resolving questions of war and peace an ever growing role is being played by the Asian, African and Latin American countries liberated from colonial or semi-colonial dependence. As was noted in a message from the USSR Supreme Soviet Presidium and the USSR Council of Ministers to the 7th conference of heads of states and governments of the non-aligned countries in Delhi, the Soviet Union has always given the efforts of the non-aligned

movement warm support in the struggle for peace and the security of peoples, for disarmament and an end to the arms race, for the re-organization of international economic relations on a just and democratic basis and for full and all-around decolonization.

We have considered it necessary to touch upon certain controversial international problems, based on the premise that information questions cannot be discussed in isolation from specific international conditions. I wish to repeat that the international political climate and the degree of mutual trust or, on the other hand, mistrust among peoples depend on what kind of information reaches people through tens of thousands of newspapers and journals, through millions of television sets and radios.

Taking this into account, the socialist states which participate in the Warsaw Pact have set out their position on the international exchange of information in a political declaration adopted early this year in Prague. In that declaration the socialist countries decisively condemned the utilization of the press, radio and television for the dissemination of biased and directly slanderous reports, which present in a distorted light the situation in various countries, as well as their politics, and which sow estrangement and enmity. They have stated that no government should permit this kind of subversive activity to be conducted from its territory. The main goal of the international information exchange must lie in its contribution to the strengthening of peace and mutual understanding, in its condemnation of propaganda for militarism, racism and interference in other people's affairs.

There is an urgent task in the re-organization of international cooperation in the area of information on a progressive, democratic basis, and in the establishment of conditions, under which all the peoples of the world would receive equal opportunities to freely disseminate information, and an end would be put to all manifestations of imperialism in this area. A significant step in this direction was the 1978 adoption by the UNESCO General Conference of a declaration on the basic principles concerning the contribution of the mass information media to the strengthening of peace and international mutual understanding, to the development of human rights and to the struggle against racism, apartheid and incitement to war. In pursuit of these goals, the UN General Assembly declared this year to be World Communications Year.

The International Program for the Development of Communications (IPDC) has an important role to play in the work to free the mass information media from the remnants of colonialism and the politics of information imperialism. In April of this year

the Soviet Committee on the International Program for the Development of Communications was established; this is evidence of the large amount of attention which our country is giving to UNESCO activities in this direction. Further, we proceed from a conviction that this program, as the documents of the 26th UNESCO General Conference point out, must be carried out "within the framework of activities to establish a new, more just and effective order in the area of information and communications."

A number of other documents approved by UNESCO also take note of the great importance of re-structuring the order of things in the information sphere, of strengthening national sovereignty in this area and of eliminating the dominance of the multinational corporations in the spiritual life of the peoples in the developing countries. The resolution of this task must be a component of the efforts of the international community, including the efforts being made through the IPDC.

The Soviet Union takes an attitude of understanding and great sympathy toward the aspiration of the developing non-aligned countries to strengthen their political, economic and cultural independence. Our policy with regard to the liberated countries is one of moral and material support for their legitimate aspirations and of solidarity with them. There is evidence of this in the total volume of aid which the Soviet Union extends to the developing countries as well as in its qualitative content.

The Soviet Union also extends to the developing countries assistance with the formation and development of national mass communication media. This assistance is not related to any political or other conditions.

Our country extends significant aid to the developing countries primarily for the establishment of facilities which are essential to the formation and development of local mass communication media (on a national basis), which would make it possible for them to strengthen state sovereignty and to free themselves from remnants of colonialism in the information sphere.

Technical assistance in this area is extended by means of equipment deliveries; short-term assignments of Soviet specialists who install and build facilities; consultations, as well as instruction for national personnel both in their respective countries and in the Soviet Union; very active technical assistance is also given to operate facilities built with Soviet help.

The communication facilities built recently with the economic and technical assistance of the Soviet Union include radio stations, television studios, telephone stations, radio transmission lines, etc. In a number of countries (Algeria, Iraq, Cuba and others)

facilities of the international communications system which uses the Intersputnik artificial earth satellite have been built and are operating successfully. These facilities are designed to meet the countries' needs for telephone, telegraph, photo-telegraph and telecode communications, as well as for the exchange of television and radio programs.

The establishment of a line of tropospheric communication between the USSR and India should be noted. The introduction of this line makes it possible to significantly improve and reduce the cost of telephone, telegraph and telex communications between the two countries, which previously were handled through London and Tokyo.

In response to the call of UNESCO and the UN General Assembly concerning the reduction of the electrocommunication rates for the exchange of information reports, the Soviet Union was one of the first to introduce new communication tariffs which are beneficial to the developing countries. This provides them with a savings of many millions of dollars. We call upon other powers with highly-developed communication systems to follow this example.

We extend significant assistance to the developing countries in the development of the printing trades and the training of specialists in the area of printing and publishing. In recent years printing equipment and Soviet specialists have been supplied to a number of countries. Specialists from the developing countries are received in the Soviet Union on a regular basis for production-technical and editorial-publishing instruction.

We devote a great deal of attention to training in the area of information and communication for specialists from the developing countries. In recent years more than a thousand of these specialists have been trained and their number is growing from year to year. At the present time about 1,400 citizens from the developing countries are studying in educational institutions and undergoing training in the area of information and communications (this figure does not include specialists from Vietnam, Cuba, Laos and Mongolia).

The Soviet Union's technical and economic cooperation with the developing countries in the area of mass information is multifaceted; Soviet organizations will continue to develop this cooperation in the future, viewing it as an important element which contributes to the restructuring of international information relations on a democratic, progressive basis, as well as to the elimination of the remnants of colonialism in the sphere of information, and to the establishment of the new international information order.

The Soviet Union places a high value on the goals and practical activities of the IPDC and provides all possible support for this program to further the interests of the developing countries. In order to contribute to the successful completion of the IPDC's noble tasks, the Soviet Union, as is well known, was one of the first states to express its willingness to take part in the implementation of those plans for the development of the mass information media in the developing countries which will be proposed by the IPDC. It announced an annual grant--to be awarded on the basis of IPDC applications--for up to 50 places in secondary and higher educational institutions of the USSR for the training of specialists in the area of the mass information media, and it contributed 500,000 rubles to the IPDC special fund.

Our participation in the IPDC will also take the form of granting Soviet equipment and specialists and extending material support; it may take other possible forms as well.

Soviet organizations are studying attentively the requests which are coming into the Intergovernmental Council from the developing countries regarding assistance with the implementation of various plans in the area of mass communications; they are expressing willingness to participate actively in the implementation of a number of these plans, which are related to the construction of communication centers and to the training of specialists, etc. This will be reported to the IPDC Intergovernmental Council through the appropriate channels.

While supporting the further expansion of IPDC activities and the work to increase their effectiveness, we would like to emphasize again that successful work within the framework of the program will be ensured only if it is carried out in strict accordance with the general principles of international relations established in UN and UNESCO documents, including the 1978 UNESCO declaration. This work must be based on respect for the sovereign rights of states and the unacceptability of assistance linked to any political conditions.

I would like to direct attention to one other aspect of IPDC activities. Given the racist and imperialistic propaganda, which has increased sharply in recent years and which tries to stick the label of terrorism on the national liberation struggle of peoples, it is important to increase opportunities for the national liberation movements to ward off the malicious slander against them, which is disseminated by certain mass information media in the West. It seems to us that the IPDC could expand the assistance which it gives to these movements in establishing their own mass information means, in providing them

with up-to-date equipment, and in training the necessary personnel for them.

Guided by all these requirements, the International Program for the Development of Communications--we are confident--will successfully realize the expectations and hopes which the developing countries and their true friends attach to it.

On this road the IPDC can count on all possible assistance and support from the Soviet Union.

'Immoral' American Media Position

Moscow LITERATURNAYA GAZETA in Russian 14 Sep 83 p 11

[Article by Professor Ya. Zasurskiy: "Washington's 'Mass Media' Stereotypes"]

[Text] The session of the Intergovernmental Council of the International Program for the Development of Communications (IPDC), which was held in Tashkent, clearly reflected the aspiration of the freedom-loving peoples for the establishment and consolidation of the new international information order. Having achieved political independence, the young states are also asserting their real right to have their own system of mass communication media, which is not subject to the dictates of the Western information-propaganda monopolies and the multinational corporations, or to the U.S. military industrial complex, which stands behind them.

These aspirations are completely in line with the declaration adopted by the UNESCO general conference, which called on the mass information means or, as they are still called, the "mass media," to contribute effectively to the strengthening of peace and international mutual understanding and to the establishment of a new and just international economic order. In the three years of its work the IPDC has achieved definite results. This program extends substantial assistance for the development of national agencies and national radio and television broadcasting systems; it has actively supported the establishment of regional informational agencies--PANA in Africa, ASIN and ALASEY in Latin America, FANA in the Arab East and OANA in Asia. Today these five regional agencies are already playing an important role in the elimination of colonial dependence on the Western information corporations; they are contributing to the more balanced exchange of information among the developing countries, as well as on an international scale.

Thus one can draw a conclusion about the IPDC's contribution to the development of international information relations. And, as

a result, there arises the question of what kind of support the program is receiving from various states. Twenty-six states have contributed more than \$3,887,000 to the special IPDC fund, including 500,000 rubles or about \$673,900 from the Soviet Union. Up to now not one single dollar has been contributed by the United States of America, Great Britain or the Federal Republic of Germany. But when the discussion concerned elections to the IPDC governing organ, the Intergovernmental Council, these were the countries which voted actively for broader Western representation, claiming that most of the assistance would be coming from the developed capitalistic countries. But the facts refute these assertions. Moreover, an active campaign against the IPDC is being conducted in the USA. The American information-propaganda business is playing a leading role in these attacks.

For example, the journal POLICY REVIEW published an article by Tom Bethel entitled "The Lost Generation of UNESCO." This article states directly that the USA is dissatisfied with the activities of this international organization for four reasons: in the first place, they do not like the fact that UNESCO is supposedly undertaking "attempts to limit the freedom of the press, providing instructions to journalists and defining their role in the press." In the second place, it is supposedly attempting to turn itself into an anti-Israeli discussion society. In the third place the UNESCO budget is growing, and in the fourth place, it is supporting the rights of "peoples" (peoples for Bethel clearly exist only in quotation marks) and not the rights of individuals.

The American propagandists are trying to discredit both UNESCO and the International Program for the Development of Communications precisely because these organizations oppose the domination of the Western monopolies and multinational corporations in the mass information media and in international communications. This has been written about openly by the specialist Dr. U. For. In his article, which was published in the magazine CHRISTIAN CENTURY, he points out that the main concern of the United States and of the American delegation to UNESCO is to "defend the real priorities of our government," and For defines them in the following way: "On the one hand, scale, balance, depth and fairness in the delivery of news and information and, on the other hand, income for business." Of course, the first exists only in words as a cover for the second, which is the main goal of the American government—the protection of American business. The American mass media system is subordinate to business, as are those propaganda actions which the American government today carries out in the international arena.

This same For makes a typical confession. He says that the U.S. desire for the free flow of information is viewed by the developing countries as "freedom for the foxes to run the chicken

coop." For is forced to recognize that the nonaligned countries are by no means inspired by the way in which the commercial "mass media" deal with the flow of information within the United States of America and to a certain degree within their own countries. In the United States, For continues, "radio, television and the press are more and more turning spectators and listeners into a product (emphasis is For's--Ya.Z.), which must be delivered to the real audience--the advertisers. As a result, the main task of the mass information media has changed. It does not consist in informing, enlightening or even amusing people; instead, it is directed solely at keeping a grip on the maximum possible audience, regardless of the harm inflicted upon it and contrary to the goals which journalism is supposed to pursue. In America, shocking, titillating sensations and the cult of celebrities and stereotypes have become the norm because the function of the information news, regardless of its own value and worth, is reduced to being just one more way to get the audience. And because this desire is the main thing, little information appears about insignificant people, about the poor, the aged or about the developing countries.

Here For reveals openly and quite accurately the mechanism by which the activities of the United States mass information media operate, as well as the basic directions in their ideological influence both within the USA as well as outside it. Only he does not touch upon one very important aspect, the ideological factor.

In their pursuit of the audience the American mass information media ignore the content of their news, or more accurately, they are indifferent about whether the content corresponds to the true state of affairs; they not only strive to promote the commercial values of bourgeois society, but they also instill its ideology.

However, the developing countries do not wish to accept the standards of Western journalism, which are based on the defense of the media's right to lie, to lead astray public opinion not only at home but beyond the borders of their country as well. The English magazine NEW STATESMAN writes about this quite convincingly: "The rich and powerful frequently make use of all kinds of laws not to uncover lies but rather to strangle any discussion in the press of their own activities. But here the magazine very accurately, although perhaps unwittingly, reveals the specific details of the activities of the modern bourgeois press, whose "freedom" is completely subordinate to the interests of those who manage it for their own selfish interests. And one cannot fail to recall here the words of the famous American specialist in the area of the mass information media, A.Liebling: "Freedom of the press is freedom for those who own the press."

The development of a new system of mass information media in the developing countries, which is based on the noble and intelligent ideas of the struggle against racism and apartheid, the struggle for human rights and against war mongering, and which rejects service to the interests of big capital, does not suit the bourgeois press and its masters. And for this reason suggestions about banning war propaganda and about the development of a code of journalistic ethics are called in the West attempts to limit the freedom of the press--they want to have the right to lie without limitation.

It is essential to add that in the name "International Program for the Development of Communications" the last word includes not only the means of mass information, but also the means of communications--mail, telegraph, telephone and many other forms of telecommunications. And here attention should be drawn to the U.S. desire to spread and consolidate its government's control over telecommunications on a global scale. The largest multinational corporation which is currently operating within the INTELSAT system of global communications is formally a private company, but in fact the U.S. government has a controlling interest in its shares. This global communications systems (which is actually American) brings in enormous profits for American business. Moreover, it serves as a very important instrument for the imperialist policy carried out by the USA. This is why the American ruling circles react so strongly to the IPDC activities, seeing in them a threat to their own claims to world domination.

Despite U.S. opposition, the IPDC has proved to be viable. And the viability of this organizations is based on the close interaction of the developing and socialist countries. They have mobilized their own solidarity, their own financial contributions, their own resources, and they have managed to withstand pressure from the largest Western powers.

8543

CSO: 1830/46

BRIEFS

DIGITAL TV BROADCASTING--A new principle of transmitting television programs over long distances by means of a digital code has been suggested by Georgian specialists. They have worked out with their colleagues from Moscow the so-called binary digital code. Television picture signals are sent over the air not via conventional electromagnetic waves, but in the form of digital impulses. Automated equipment at the receiving stations transforms them into electromagnetic signals. The new television propagation code makes it possible to transmit simultaneously several television programs via artificial earth satellites. [Text] [LD120326 Moscow Domestic Service in Russian 1200 GMT 8 Dec 83]

CSO: 5500/1037

NEW MARKETS FOR INTEGRATED CIRCUIT FIRMS IN UK, FRANCE, FRG

Paris ELECTRONIQUE ACTUALITES in French 11 Nov 83 p 46

[Unsigned article]

[Text] The public and private telecommunications market, which is in full swing toward complete digitization, now appears as a driving element of the European semiconductor industry. The major European integrated circuit manufacturers thus have under development or already in production, SLIC (subscriber-line interface circuit), COFIDEC, and CODEC (coder-decoder) devices, filters, modems, DTMF generators, other microphone amplifiers, protection circuits for telephone sets, and current and future private or public telephone exchanges.

CMOS technology seems to be the manufacturers' favorite in this area, without however abandoning the others. For SLIC, as an example, only bipolar technology makes it possible to reach the required high voltages. But where do the manufacturers stand currently?

The English company MEDL, which relies on oxide-insulated CMOS technology for future private exchanges and telephone sets, is also examining CMOS/SOS for signal processing circuits such as CODEC.

MEDL already has CODEC in its catalog in the form of decimal dialing circuits, line interface controllers, microphone amplifiers, and TSAC (time-interval allocators).

Similarly, another English company, STC, has developed tone ringers and dialers, pulse dialers, and digital signal processing circuits, using CMOS and NMOS technologies. Thomson Efcis, in turn, has a family of single-chip modems in CMOS technology that meet Bell 202 and CCITT V23 standards (like the EPB 7510, 75-150-200 baud for sending and 1200 baud for receiving), as well as a digital modem, the 7910, which it produces as second source to AMD. SGS ATES has under development bipolar technology DTMF generators, speech circuits, and a SLIC in two circuits.

The two DTMF generators currently being sampled, the M774 and LS1240, together with an annunciator and several passive components, can replace the electromechanical bell of telephone sets. The M774 produces 16 tones, while the simpler LS1240 produces only one. At the beginning of the next year, the Italian company should be sampling a SLIC in two circuits, one of which should fulfill the need for a 120 V interface, and the other be responsible for processing most of the signals.

Digital and Analog Processing

Ferranti uses the two signal processing techniques (analog and digital) for its microphone amplifiers, decimal dialing circuits, and CODEC. The last CODEC of the English company, the ZNP CM3, combines delta-sigma conversion for analog I/O (input/output) and the associated digital filters and circuitry. The technology used for this circuit is an improved version of the CDI (collector-diffusion-isolation) technology with six instead of five masks, which make it possible to obtain a better figure of merit and a higher operating voltage; the ZNP CM3 thus consumes 300 mW in operation and 25 mW in standby.

Plessey's research in telecommunications has resulted in the fabrication of a CMOS-technology COFIDEC using pulse code modulation. The company also manufactures 9.6 Kbit/s, V23 compatible modems with silicon grid NMOS technology.

In France, in addition to Thomson Efcis, Eurotechnique, MHS, and CNET (National Center for Telecommunication Studies) are also pursuing an active policy in telecommunications.

Eurotechnique is selling a COFIDEC, the ETC 5057, which uses CMOS technology with two polycrystal silicon levels, and which consumes 50 mW in operation (3 mW in standby). Other versions of this circuit with a parallel interface and availability of analog and digital return loops for test, are also under study.

Using Harris' CMOS line, MHS is developing a number of CODEC and other logic circuits, as well as SLIC devices.

CNET has commissioned the Norbert Segard center to perfect a CMOS line for advanced circuits.

Philips is currently turning its attention to telephones and is working on what it calls a "telephone" circuit integrating on one chip the principal functions of a telephone set. This I²L technology circuit, the TEA 1046, combines the transmission and dialing functions of a DTMF. The transmission portion makes it possible to replace the carbon microphone with an electret or microdynamic one, while the integrated mute function (attenuation of the listening signal and inhibition of the signal derived from the microphone) allows the use of a keyboard with a single contact per key. The TEA 1046 can

be connected directly to the line (operation at a line current of 10-120 mA). Philips also has decimal pulse dialing circuits, and a CMOS telephone repertory circuit which can store up to 10 numbers of several digits, is currently being sampled.

The German company Siemens also has specific telecommunication circuits in production or under development. Such are the two SLID and STID circuits that allow digital transmission on conventional lines according to a process known as ping-pong. The STID is located at the subscriber set, and the SLID located at the exchange can manage four sets equipped with a STID device.

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CSO: 5500/2553

AGENCY WEIGHING EXPANDING EXISTING MICROWAVE NET FOR CABLE TV

Copenhagen BERLINGSKE TIDENDE in Danish 3 Dec 83 p 9

[Article by Michael Rastrup Smith: "Five Billion Kroner for Videotelephone"]

[Text] One of the only provable advantages for the hybrid net is the capability of telephoning by videotelephone. All other communications tasks can be performed more traditionally for less cost. For example, P and T [Post and Telegraph] is prepared to send foreign TV to all parts of the country for 260 million kroner.

The minister for public works, communication and transportation has gone into the isolation booth. With him are members of the government coalition. Together they are thinking about the coming hybrid net.

When completed the hybrid net will cost more than five billion kroner. Its only function at the outset will be to distribute satellite and foreign TV.

Today Denmark has a widespread telephone net. It reaches the farthest remote corner of the country. The telephone net at the moment is a "broad-band net." It transmits telephone conversations, telex and data information around the country.

Communal Antennas and Telephone Cables

The cables of the telephone net are not the only cables underground in Denmark. There are also cables from the country's 8,615 communal antenna installations. Their size varies from 8 to 40,000 possible terminals (Arhus). It is typical of antenna installations that they are closed circuits, the only purpose of which is to transport radio and TV signals from a communal antenna to the connected households. The antenna installations are not mutually connected with each other.

Communal antennas were erected years ago. When the inhabitants of a building became tired of having a forest of antennas on the roof, they came together

and purchased a communal antenna which delivered signals to all of the households. Often there were five, six, eight families who got together in this way.

Since then there has been widespread use of this method. Entire groups of homes came together with a communal antenna. And finally entire towns went together with a single antenna. This antenna is often installed on a high mast so that it can "see" as far as possible. In this way an entire town can get the best possible pictures, and programs from abroad.

Power Cable

But there is a limit of how far even a communal antenna can receive signals. In parts of Jylland Swedish TV signals can not be received, and in parts of Sjaelland German TV signals can not be received.

To solve this problem and others the idea arose to create a nationwide broadband net of power cable. With this net the requirements could be met with a couple of communal antennas for the entire country. Via the broadband net the satellite and other foreign TV from these antennas could be distributed to all Danish households.

Distribution via a broadband net is its greatest feature. There is, however, hardly a need for this feature for a long time. The net is like a 10-track electronic highway. It can handle all forms of traffic. Also videotelephone, which the existing telephone net can not do yet. A technique which would make that possible is, however, on the way.

The disadvantage of a broadband net going to all households is that it is extremely expensive. If all households are to have a terminal, the total cost would reach 20-50 billion kroner.

The Hybrid Net

Therefore the idea arose of a hybrid net. That means a bastard net. In the hybrid net the expensive power cable is also used, but does not go to each individual household. It goes from town to town. There it is connected to the town's existing communal antenna installation. Towns which do not have such an installation will, in the coming years, get one from the telephone company.

The individual subscriber can not, however, communicate via videotelephone via the hybrid net, because the power cable is not brought into the homes. It is the hope of the telephone company that the cables will gradually be connected as desired. It is expected that a number of activities will eventually pay for connecting into the power cable.

By just using the power cable between the towns and expanding the existing communal antenna installations with ordinary cable, the price of the hybrid

net can be held down to five billion kroner, compared with the cost of a completed broadband net of 20-50 billion kroner.

Even if a hybrid net costs much less than a fully expanded broadband net, many people remain critical of the project.

"We can manage with the telephone net we have today. Of course it can not yet be used for videotelephone, but it can support all the other communication tasks we have today, including data transmission. In addition it will create a renaissance when the telephone company digitalizes the country's telephone centrals in the beginning of the 90's," say some of the critics of the hybrid net.

Satellite Antennas

Instead of a hybrid net it is pointed out that the communal antenna installations across the country can be expanded to larger units. At each installation, for example, a satellite antenna can be erected. In this way satellite TV can be inexpensively brought to most Danes.

The problem with getting German, Swedish and Norwegian TV around the entire country could be solved by sending these TV signals via the existing microwave net of the P and T.

For 260 million kroner it can be expanded to bring foreign TV to all parts of the country. In this way we already have three German programs permanently received on a P and T microwave tower on Borups Alle in Copenhagen.

One of the critical points often raised against the hybrid net is that there is no calculation of what the billions invested in the net will produce in economic advantages for society.

9287

CSO: 5500/2557

DELAY UNTIL 'HYBRID NET' COMPLETION IRKS SATELLITE TV INTERESTS

Will Take Five Years

Copenhagen BERLINGSKE TIDENDE in Danish 13 Dec 83 p 7

Article by Michael Rastrup Smith

Text Minister of Public Works, Communication and Transportation Arne Melchior will not grant dispensation allowing Copenhagen area antenna associations, for example, to view satellite TV when it premieres 19 December. They must wait until the hybrid net is in place. Until then, satellite TV will cost the average Birkerød home owner, for example, 1,641 kroner per year.

Copenhagen area viewers will have to wait up to 5 years to see TV from the communications satellite ECS-1, which will premiere 19 December.

Although the Postal and Telegraph Service, for example, has already paid for the ECS-1 satellite, Melchior refuses to open it up to transmission.

"By providing free satellite reception, we could risk delaying the establishment of a hybrid or broad-based network 10 years. Consequently, we would not meet our goal, namely to give the entire population--not just those covered by cable and antenna firms--a chance to take advantage of this offer. Hence, I refuse to give in to the voices who want satellite TV here and now," said Melchior.

His opinions are countered by the chairman of the Antenna Section of the Radio and Electronics Wholesalers Association, civil engineer O. Sveistrup:

"Satellite TV cannot possibly be made available to everybody through the hybrid net. Some 400,000 households or more than one million people living in the country will not be covered by the net. Furthermore, I believe that only a small fraction of the existing antenna firms will hook up to the hybrid net; it is simply too expensive. Instead, I expect that people will be satisfied with programs they can receive over the air or from directly transmitting satellites, which will be in place in a couple of years."

According to the Telecommunications Administration's report just submitted to the Minister of Public Works, Communications and Transportation, the average cost of satellite TV via the hybrid net will be 420 kroner per year per household. That does not include the cost of establishing a joint antenna if one is not already available.

Birkerød is one municipality in which a joint antenna must be erected before its inhabitants can benefit from satellite TV. Kurt Ojgaard with the municipality's technical administration said that, according to the KTAS [Copenhagen Telephone Co], the individual Birkerød home owner will have to pay an initial fee of 1,000 kroner to hook up to the hybrid net. In addition to that, he has to pay a fixed annual fee of 1,345 kroner plus a moms [value-added-tax] of 296 kroner.

Apartment dwellers in Birkerød will pay a little less. The hook-up fee is the same, 1,000 kroner, while the annual fee is only 1,225 and the moms is 276 kroner.

The Telecommunications Administration's average hook-up fee is based on the premise that 30 percent of the viewers will hook up to the hybrid net immediately, while 60 percent will be hooked up after 7 years.

Rural Areas Neglected

Copenhagen BERLINGSKE TIDENDE in Danish 15 Dec 83 p 10

Article by Michael Rastrup Smith

Text "The hybrid net could mean death to activities in small communities," according to a report made public by the Planning Administration yesterday. This report is a commentary on the hybrid net report submitted by the Telecommunications Administration a month ago.

The Planning Administration particularly stresses that more than one million people who live in towns consisting of less than 250 households will not be hooked up to the hybrid net. By including suburbs, it means that towns of about 2,000 persons will become isolated. And, according to the Planning Administration, there are many such towns in Denmark.

"Municipal plans also apply to local towns, small communities with their own school, library and shops. Politicians are very much interested in preserving the activities of small towns, but the hybrid net could weaken these communities," said Arne Gaardmand, a Planning Administration official.

He said it could be hazardous to small communities not to be hooked up to the hybrid net because local shopkeepers would be less able to compete with shopkeepers in somewhat larger communities under the net. In his opinion, a mere three to five percent shift in competition would be enough to spell death to shopkeepers in towns without the net. However, local schools are also in jeopardy. Suddenly being faced with the lack of information provided by the hybrid net could be a motive for them to close.

The report points to Ringe, Fyn as a concrete example of a community that could become split by the hybrid net; eight to nine local towns with their own school and library will not be hooked up to the net.

"Although the intent of the hybrid net is to decentralize, we are seriously concerned that the net could lead to centralization instead. Anyhow, there is much to suggest that centralization effects would outweigh decentralization effects," said Gaardmand.

He is also dissatisfied with the fact that people in outlying areas who qualify for the net will have to pay more for it than do those who live in more densely populated areas. That does not create equal conditions for industry in these areas.

The Planning Administration has not been able to establish whether there is need for the many TV channels and the two-way video communications which will be offered to about 4 million Danes by the Telecommunications Administration. Neither has it studied the importance of the hybrid net to many small local communities. But the Planning Administration points out that calculations must be made relative to the economy and the necessity of the hybrid net before reaching a final decision about its merit. And, finally, there is now call for a debate on the issue. "The issue has not been debated enough," according to the Planning Administration.

8952

CSO: 5500/2570

REVIEW OF FRG'S DFS SATELLITE TELECOMMUNICATIONS PROGRAM

Stuttgart FLUG REVUE in German Dec 83 pp 30-31

[Article by Goetz Wange: "Postal Service in Outer Space"]

[Text] The beginning of a new era in the telecommunications of the FRG: with the German telecommunications satellite DFS (Deutsches Fernmeldesatellit [German telecommunications satellite]) the German postal system is purchasing its first satellite. It will supplement the cable and radio-relay networks. It will also be the precursor of a new range of frequencies. Planned start: 1987.

The transmission of news by satellite has for a long time been commonplace. Live television pictures of sports events in distant countries and situation reports from foreign correspondents are just as much a technological routine as the countless telephone messages crossing the Atlantic.

Since the beginning of the first commercial news satellite, Early Bird, in 1965, developments have advanced rapidly. Experts predict an annual growth rate of 15 percent for international telecommunications up until the end of the century. The German postal system employs for these services the satellites of the international organization known as Intelsat. And this relationship is expected to continue. But in the domain of national telecommunications a new era is opening up: for the first time the German postal system is purchasing its own satellite system--the German telecommunications satellite DFS.

The existing contract sets the total costs at 815 million marks and involves the construction of three satellites together with 34 terrestrial radio stations. The satellite will take over actual operational functions, the second is to be parked in orbit so as to be available as a reserve in case of breakdowns. The third is stored on the ground as a replacement.

The DFS is being developed by a consortium headed by Siemens. The satellite technology will be provided by two firms experienced in astronautics: MBB/ERNO and ANI-Communications Engineering (formerly AG-Telefunken Communications Engineering). The first launch is expected to be in June 1987. The 1,400-kg satellite is to be put into a geostationary orbit at an altitude of

36,000 km above the equator at longitude 23.5° East. A corresponding reservation of one ARIANE already exists with Arianespace which as in March 1984 has been responsible for the marketing of the launching rocket. But there the German telecommunications satellite is still listed as POSISAT--a designation deriving from the first preliminary study phase of the project.

Up until not so very long ago the German Federal Postal System maintained a rather reserved attitude toward the idea of having its own national satellite system. Its terrestrial communications links are among the best constructed in the world and the use of a satellite for a country as small in area as the FRG seemed to make little sense.

But the opening up of new regions in communication technology resulted in customer demands which could be but inadequately met by previously existing communications links. This applies particularly to the so-called "new services." Specialists understand by this, for example, fast data transmission processes involving up to 8 million signals per second, such as are required in linking large computers. But also such needs arise in fast and accurate transmission of technical drawings as facsimiles and in video conferences. It will be possible to provide such services over a broad area only by means of a satellite. In such a system a relay station in outer space can supply many small ground stations which are then set up directly at the location of the postal client. These satellites may also be thought of as head stations through which the data are fed into already existing local cable networks. In particular, it is expected that it will be possible to use satellite radio communication to bridge over the time gap from the present until the year 2000, when even the most remote regions of the FRG will be linked by glass-fiber cables. For already long before that--by the end of the eighties or the beginning of the nineties--the German postal system will offer its clients services over so-called integrated networks. This means that telephone communication, data exchange and both picture transmission and voice transmission will be carried over a common transmission path. For this purpose what were formerly analogue telecommunications networks must be converted to digital operation.

In addition to these "new services" the German telecommunications satellite is naturally also taking over traditional distributing tasks for telephone and data traffic as well as for television and radio programs. For these transmissions the satellite will operate in the 11/14-GHz (gigahertz) and 12/14-GHz frequency range. Eleven active and 6 redundant transponders permit, for example, the simultaneous transmission of about 7,000 two-way telephone conversations and 7 color television programs with stereo sound.

A communications engineering novelty: one of the transponder channels is being operated experimentally in the 20/30-GHz range. Operations will be carried out with these new frequencies in order to collect information for future satellite systems. For at the lower frequencies because of the increasing number of satellites there is the threat of a bottleneck, which may be overcome by entering the new frequency range. But this will not be without its engineering problems. As the frequency rises there is also a rise in susceptibility to climatic disturbances. During rainfall, for example, the

factor is so great that the signals either arrive only much attenuated or are completely absent.

Up to now the Japanese CS-2 was operating as the only news satellite in the world in the new frequency band. But the experience of the Japanese--insofar as it is accessible--is not transferable to the situation in Germany. The local climatic conditions are too different. With the advanced communications technology satellite (ACTS) which is to be launched in mid-1986 NASA is also turning its attention to problems in the new frequency range.

Otherwise the German telecommunications satellite DFS is, however, being built on the basis of what is essentially familiar technology. Thus to supply the necessary electrical energy a solar generator is being installed which was developed by NBB/ERNO for the Intelsat-V program.

Also for other components there have been borrowings from other programs. Especially in the case of the European communications satellite ECS and in the case of the TV-Sat, still in development, which is employing specially advanced technologies as a direct-transmitting television and radio satellite. From this there has been derived, for example, the combined two-fuel propulsion system for the orbit and attitude control using 14 small 10 N propulsors. The configuration of the satellite is based upon a modified ECS design. Also for the communications engineering equipment ANT is employing techniques taken from the two satellite programs, e.g., further developed power stages and channel amplifiers.

The satellite--including the three antennas (S-band, Ku-band, Ka-band)--will be 6.78 meters tall, the span with unfolded solar panels will be as much as 15.00 meters.

The DFS is also expected to facilitate telecommunications with Berlin. Nevertheless, in comparison with those of transatlantic satellites the irradiated zone is relatively small. Hence the signals are more highly collimated when they hit the ground stations. One of the practical effects: with a diameter of 11 meters the receiving reflectors for the DFS are only about one-third the size of those conventionally used for ground stations in international traffic. This applies to the stations in Berlin and Usingen via which the experimental transmissions are to be carried out in the 20/30-GHz range. For the point-to-point transmission between Usingen and Berlin, in the 11-GHz range, 16-meter stations are being discussed. The slightly greater dimension is required because it is planned to transmit high-quality television signals from and to the Berlin studios of the television companies via the satellite instead of through the previously conventional radio relay.

Difficulties with Small Antennas

Still undetermined are the locations for setting up 30 transmitting and receiving facilities having an antenna diameter of only 0.5 meters. They are intended for commercial radio traffic in the transmission of the "new service" at 17.7 GHz. At the present time the German Federal Postal System is still looking for a partner.

There are also yet in progress studies relating to a mobile reporting station having a 2-meter diameter. It is said to be now under test in the 20/30-GHz range. However, such small ground stations make sense only when the satellite can be kept with the greatest possible accuracy in its position in outer space. In the case of the DFS a triple axis stabilizing system secures that the deviation in the east/west and north/south direction is maintained at the astonishingly low value of $\pm 0.07^\circ$. The antenna orientation can be maintained with an accuracy of $\pm 0.16^\circ$. These values acquire special significance when one considers the overcrowding that exists in the equatorial orbit. In the preferred sectors the policy has already been adopted of positioning the satellites at a spacing of only 2° . In the future it is expected that large antenna platforms will ameliorate this situation.

In the German telecommunications satellite the German Federal Postal System sees not competition with but rather enhancement of its cable and radio-relay networks. For industry the project represents a chance to demonstrate its capabilities. For hitherto there has been only one export contract, the ARABSAT, in the books of the European astronautical industry. So predominant is American competition.

8008

CSO: 5500/2572

MATRA'S INVOLVEMENT WITH ECL, TELECOM 1, INMARSAT, SPOT

Radio Electronique Actualites In French 18 Nov 83 p 22

Article in "Extra Space: 13 Telecommunications Satellites On Order From 1984-1987"

Extra Space, the telecommunications satellite sector, the activity of MATRA's subsidiary, Aviation and Tracision Company's Space Branch in 1983, will be double that developed in 1982. The program calls for 13 launches of satellites, accounted for by the firm during that period. On the other hand, its observation satellite activity should remain stationary, unless military projects come into being.

In 1984, Matra Space will have a revenue of 1.08 [billion francs], 70 percent from the company's own sales, and 30 percent via subcontractors. Observations satellites will represent 34.3 percent of this revenue, telecommunications satellites 29 percent, the scientific sector 13.6 percent and launching facilities (Ariane) 22.1 percent. The manager of the forthcoming Intersat 1984-1987, 50 company, projects a 1982 revenue of 1.108, 30 percent from telecommunications 31.4 percent; observation 22.8 percent, scientific 13.6 percent. Launching facilities will account for 22.2 percent.

In 1983, Matra Space has been involved in 13 national and international investigations in telecommunications, 3 observation, 1 scientific, astronomical and geophysical studies, and 1 space transport.

Other major European partners, particularly British Aerospace, are engaged in 1984 in all telecommunications under the 7 telecommunications program. That program is scheduled to date by European activity.

Extra Space will be financed by Ariane 106. In June 1983, the company has received 100 million francs in financing from the French government, to be repaid by 1987. It will also receive 100 million francs from the French government, as well as 100 million francs from the French government.

Matra Space will be financed by 100 million francs from the French government, to be repaid by 1987. It will also receive 100 million francs from the French government, as well as 100 million francs from the French government. The company will also receive 100 million francs from the French government, as well as 100 million francs from the French government.

The launch of these operational satellites, MIRA 2, will provide transmission facilities provided by the 1. facilities also for (a) transmission of information on data and/or telematics and all other types of satellite-based handling of test material, photos, remote printing in the zone covered by the MIRA (satellite Multiservice System). The launching of this satellite is targeted for 1984. Currently, MATRA is proceeding with the launch of MIRA 3.

The second [Attitude and Orbit Control System] (3-axis type) developed by the Space Products and Technology Division of MATRA Velizy, will provide permanent and self-governed: Positioning of the satellite, very highly stabilized outward aiming of the antennas, control of internal movements, and instantaneous response to the known perturbing effects at MIRA 2.

The main feature of the system is that it provides the satellite with a high reliability for aiming and repositioning at its base.

The MIRA complex and delicate functions are governed by the most advanced information theories. By programming them on a 16-bit microprocessor to improve satellite response during its different critical phases (inclination, PFI, PFI, special missions, environmental constraints) and to improve its own performance, MATRA has achieved the first space application of the digital system and a microprocessor.

4.1.1. Program

The MIRA program is designed to equip France with a system capable of providing domestic and overseas departmental coverage of television, conventional telecommunications and television services and, above all, by way of a high speed digital link of data for the management of the development of telecommunications.

The launching of MIRA 1 is scheduled for April 1984, and that of the second flight model in September 1984. The first flight model is presently undergoing environmental testing at the CNES (National Center for Space Studies). MATRA has received and order for three satellites of this type. With the MIRA program, MATRA has also received from PTT a contract to develop a system transmission stations.

Satellites and ground bases will be equipped with a network of ground stations (VHF/UHF) with receiving antennas, enabling them to receive information and collect, sports and professional events programs.

The second satellite increases the payload carrying capacity (15,000 kg to 25,000 kg) and the useful life of the present generation of satellites. MATRA and MIRA 2, however, is part of the Satcom International (all European countries) group, have decided to jointly develop the ground-based platform, particularly that which is compatible with the existing European ground-based communication development, and jointly adapt the space-based platform as well as terrestrial and maritime telecommunications systems.

more technological satellite, the Athos, will be the first Eurostar platform. This satellite, which will be one of the "passenger" of the Athos, a demonstration flight targeted for the end of 1985, is intended to qualify the Eurostar platform, as well as the multiplexed (MPT) television communications payloads, in orbit, and to qualify the running of tests in the Ka (20/30 GHz) telecommunications band.

MAIRA will be the prime contractor and the integrator of Athos.

United Satellite Ltd, a British company, has also chosen the Eurostar platform for its Unisat satellite, whose two missions will be:

- The broadcasting of two direct-TV channels in Great Britain;

- The transfer of data at a high bit rate within Great Britain and between Great Britain and the United States.

Its launching is targeted for early 1986. A second launching could be scheduled for the end of the same year.

MAIRA is also prime contractor for the Hipparcos satellite, which is designed to scan the celestial sphere. This will be a 1,065-kg geostationary satellite with an operational life of 2 and 1/2 years, ordered by the ESA.

New INMARSAT Satellites

The Mercury A satellite, launched in December 1981, is being used by Inmarsat International organization to provide telephone, telex, data transmission and distress signal communications links between ships at sea and shore stations.

The INSY has ordered a supplementary model, Marces B2, which is to be used by Inmarsat. This satellite is in the final stages of testing and will be ready for launching in January 1984. MAIRA will be cooperating with the American firm Hughes Aircraft and with British Aerospace in a joint response to the call for bids launched recently by Inmarsat on a new generation of communication satellites designed for the merchant marine. An agreement in this regard has just been signed between the British and American companies and Incom International.

For the CNES, Matra Space has the prime contractorship for the two Earth observation SPOT satellites, each weighing 2 tons, equipped with an onboard computer and designed for a polar orbit around the Earth at an altitude of 836 km. The first of these will be launched around mid-1985. Among the prime contractors, also Skyplot IV, ordered by the British Defense Ministry, supplying two satellites that are to be launched before the end of the current decade. MAIRA will provide the attitude and orbit control system.

For the design of launchers, MAIRA intervenes. The Atlas equipment will be supplied by the company. The Ariane equipment will be supplied by European firms. MAIRA will be in charge

lator and sequencer. Bay No. 13 is currently being performance-tested. Some changes were incorporated beginning with Bay No. 12; the latter was designed for Ariane 3, which can orbit two satellites. Beginning in 1984, bays will be integrated at the rate of six per year, each costing around 30 million francs, half of which goes to make up MATRA's revenue. From 1984 to the end of 1987, the assembling of bays for Ariane 2 and 3 will be overlapped by that of bays for Ariane 4. The latter launcher, a larger one, will need a larger volume of equipment.

MATRA has equipped itself with a test-measurement setup that enables the checking of large-sized onboard antennas, alone or integrated with a satellite.

Installed over the roof of the satellite integration building, a radome, 13 meters in diameter and designed as an inflatable structure, protects the space equipment being tested. It is equipped with a network that is transparent to radio waves.

A tower 70 meters in height, situated at a distance of 400 meters, supports the antennas and measuring instruments. The assembly forms a so-called inclined base that provides the best possible riddance from interferences caused by reflections from the ground and from surrounding structures.

The measuring system, fully programmable by computer, enables the automatic recording, at a distant control room located near the radome, of test measurements on separate antennas as well as on an integrated satellite.

Spaceborne Robotics

The microgravity experiment being planned for 1988-1989 aboard Spacelab will enable MATRA to put into practice its acquired know-how in the domain of spaceborne robotics. For the past 2 years, the firm has been doing some original experimentation consisting of real-kinematical tests on a system of orbital rendezvous and docking.

The simulation facility consists of different subassemblies:

- Two consoles: One connected to the central computer and the other devoted to the development of robotic algorithms, enabling the development of softwares adaptable to spaceborne and industrial robotics;

- Electronic control equipment associated with the TV monitor;

- The robot with dexterity in its "right hand" (manipulator with five degrees of freedom), tactile sense in its "left hand" (three degrees of freedom), which is equipped with force sensors, and vision in its "eye," in the form of a camera that, among other things, recognizes shapes.

The objective, which was attained in December 1962, was to define a fully automatic sequence during which the element in motion, starting from any position and from any attitude within the limits of the camera's field of vision, approaches the camera in the same manner as a hunter approaches his target.

This experiment will have near-term technological spinoffs throughout the MATRA Group, particularly in the industrial robotics sector. As of now, the robotics laboratory has already developed experimental automatic assembly setups (Jaeger onboard instrument panels) for the Control and Automations Branch, and is presently participating in the development of a vision module for industrial application.

9238

CSO: 5500/2560

BRIEFING ON PTT 1984 TELECOMMUNICATIONS BUDGET

Paris ELECTRONIQUE ACTUALITES in French 25 Nov 83 p 7

Article by D. Levy: "1984 Telecommunications Budget: 29.6 Billion Francs"

The PTT's draft budget for 1984 marks a stabilization of investments vis-à-vis last year's budget. In fact, although program authorizations total 31.6 GF (billion francs), up 20.3 percent over 1983, the telecommunications portion totals only 29.6 GF (+8.9 percent), 2 GF of which will go to financial institutions. Investments concerning the postal system will increase only 6.3 percent to 2.45 GF, while general services will level off at 436 MF (million francs, +8.7 percent). Obviously, the difference consists of the 3.4 GF allocated to the electronics sector! This budget bill has just been passed by the National Assembly.

The telecommunications investment budget will go principally into the equipping of urban networks (7,084 MF, of which 6,584 MF will be for distribution facilities, into switching (6,012 MF), into the equipping of interurban networks (4,809 MF) and into terminal equipment (3,195 MF). Globally, within those totals, 1,180 MF are allocated to videotex, 550 MF to wideband systems, and 300 MF to satellites. The R & D budget will total 2,889 MF.

In addition to expanding the telephone network (22 million principal lines to be installed by the end of 1984 versus 20.9 million in 1983), emphasis will be placed on improving the reliability of the distribution system, on the digitizing of the telephone network, adaptation of the network to videotex services (rise to 1 million terminals in service by the end of 1984 versus 700,000 in 1983), increasing the reliability of communications trunking facilities by extending the grid meshing of the interurban network, the use of electronic (digital and TSS) telephone sets, and expansion of the detailed switching capabilities of the electronic automatic switchers. As regards radio, priority will be given to terrestrial and optical-fiber underwater transmission systems, to technological studies (participation in the Integrated Telecommunications and to the development of terminals, equipment and facilities for general-purpose ISDN, Integrated Services Digital Network). It should be noted that 4.5 GF National Center for Telecommunications Research will have a supplementary higher capital equipment budget.

2.455 GF for Postal Services

Under the expanded mission assigned by the government to the PTT, the supplementary budget will contribute 3.4 GF to the financing of the electronics sector, consisting of 1.6 GF to increase the outright funding of the sector's public enterprises by the state, and 1.8 GF in the form of contracts and grants in aid to research and industrialization, directly or through the ADI [Data Processing Agency].

The 2.455 GF in program authorizations to the Postal Services will be devoted, in particular, to the modernization of routing facilities, including automation of sorting (374.4 MF); modernization of post offices, including the automation of mailing windows, microcomputers and various automats (623 MF); renewal of equipment at data processing centers and continuation of "Cheops" service-window terminal installations (389.2 MF); and research and development (89.7 MF for facsimile and electronic financial services in particular).

9399

CSO: 5500/259

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France will continue to export about 10 to 15 percent of the total world supply for the optical disk. More precisely, France is aiming at maintaining its position in the world market, 30 percent of the American market and 10 percent of the Japanese market. It will market the disk as the CD, with a view to export to provide a second source of production for the United States. France is only with French production. The business plan of the French production firm will consider exports to 1984 to 1988, 1989, 1990, 1991, 1992, 1993, 1994 and 1995. The number of disks produced in 1984 will be about the same period, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994 and 1995. The number of disks produced in 1985 will be about the same period, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994 and 1995. The number of disks produced in 1986 will be about the same period, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994 and 1995. The number of disks produced in 1987 will be about the same period, 1988, 1989, 1990, 1991, 1992, 1993, 1994 and 1995. The number of disks produced in 1988 will be about the same period, 1989, 1990, 1991, 1992, 1993, 1994 and 1995. The number of disks produced in 1989 will be about the same period, 1990, 1991, 1992, 1993, 1994 and 1995. The number of disks produced in 1990 will be about the same period, 1991, 1992, 1993, 1994 and 1995. The number of disks produced in 1991 will be about the same period, 1992, 1993, 1994 and 1995. The number of disks produced in 1992 will be about the same period, 1993, 1994 and 1995. The number of disks produced in 1993 will be about the same period, 1994 and 1995. The number of disks produced in 1994 will be about the same period, 1995. The number of disks produced in 1995 will be about the same period, 1996.

On 1 July 2000, the authors

[illegible]

1. The first step is to identify the key components of the system. This involves understanding the hardware, software, and data involved. For example, in a web application, this might include the server, the database, and the user interface.

[illegible]

Alper, S. and J. A. Roberts. 1993. *Principles of Mineralogy*. 4th ed. New York: Wiley.

* C_{10}H_8 = 126.17 g/mol; C_{10}H_6 = 126.14 g/mol; C_{10}H_4 = 126.12 g/mol.

[illegible]

Available, unclassified voice, text, data and image transmission services are available on all equipment.

The 1990s represent a critical 10- to 15-year period of consolidation, when the 1990s and 2000s generation, i.e. the outcome of 5 years of development, will be that decade and a half of low-fringe investment in development costs.

It is capable of supporting the transmission of voice, text, data and images. It also provides message and filing capabilities and includes interactivity with both the different public and private networks (Renes, Transpac, etc.). It was designed around the system and includes two principal software components: a management software designated GRSUM; and a user-oriented software MPT-3000.

The product is part of the Thomson strategy disclosed by the Communications Regulatory Authority, Jacques Barreau, Business Communications. It illustrates the convergence brought by the overlapping of three domains: telecommunications, data processing and identification information. The Thomson group is developing a new 20-30% Communications sector.

The company's activity is based on a three-pronged approach: developing products for infrastructure products; the engineering of systems; and integration of different software products performing an essential function and the software development process of advanced technology. Among these are the Mapas 115, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 660, 670, 680, 690, 700, 710, 720, 730, 740, 750, 760, 770, 780, 790, 800, 810, 820, 830, 840, 850, 860, 870, 880, 890, 900, 910, 920, 930, 940, 950, 960, 970, 980, 990, 1000, 1010, 1020, 1030, 1040, 1050, 1060, 1070, 1080, 1090, 1100, 1110, 1120, 1130, 1140, 1150, 1160, 1170, 1180, 1190, 1200, 1210, 1220, 1230, 1240, 1250, 1260, 1270, 1280, 1290, 1300, 1310, 1320, 1330, 1340, 1350, 1360, 1370, 1380, 1390, 1400, 1410, 1420, 1430, 1440, 1450, 1460, 1470, 1480, 1490, 1500, 1510, 1520, 1530, 1540, 1550, 1560, 1570, 1580, 1590, 1600, 1610, 1620, 1630, 1640, 1650, 1660, 1670, 1680, 1690, 1700, 1710, 1720, 1730, 1740, 1750, 1760, 1770, 1780, 1790, 1800, 1810, 1820, 1830, 1840, 1850, 1860, 1870, 1880, 1890, 1900, 1910, 1920, 1930, 1940, 1950, 1960, 1970, 1980, 1990, 2000, 2010, 2020, 2030, 2040, 2050, 2060, 2070, 2080, 2090, 2100, 2110, 2120, 2130, 2140, 2150, 2160, 2170, 2180, 2190, 2200, 2210, 2220, 2230, 2240, 2250, 2260, 2270, 2280, 2290, 2300, 2310, 2320, 2330, 2340, 2350, 2360, 2370, 2380, 2390, 2400, 2410, 2420, 2430, 2440, 2450, 2460, 2470, 2480, 2490, 2500, 2510, 2520, 2530, 2540, 2550, 2560, 2570, 2580, 2590, 2600, 2610, 2620, 2630, 2640, 2650, 2660, 2670, 2680, 2690, 2700, 2710, 2720, 2730, 2740, 2750, 2760, 2770, 2780, 2790, 2800, 2810, 2820, 2830, 2840, 2850, 2860, 2870, 2880, 2890, 2900, 2910, 2920, 2930, 2940, 2950, 2960, 2970, 2980, 2990, 3000, 3010, 3020, 3030, 3040, 3050, 3060, 3070, 3080, 3090, 3100, 3110, 3120, 3130, 3140, 3150, 3160, 3170, 3180, 3190, 3200, 3210, 3220, 3230, 3240, 3250, 3260, 3270, 3280, 3290, 3300, 3310, 3320, 3330, 3340, 3350, 3360, 3370, 3380, 3390, 3400, 3410, 3420, 3430, 3440, 3450, 3460, 3470, 3480, 3490, 3500, 3510, 3520, 3530, 3540, 3550, 3560, 3570, 3580, 3590, 3600, 3610, 3620, 3630, 3640, 3650, 3660, 3670, 3680, 3690, 3700, 3710, 3720, 3730, 3740, 3750, 3760, 3770, 3780, 3790, 3800, 3810, 3820, 3830, 3840, 3850, 3860, 3870, 3880, 3890, 3900, 3910, 3920, 3930, 3940, 3950, 3960, 3970, 3980, 3990, 4000, 4010, 4020, 4030, 4040, 4050, 4060, 4070, 4080, 4090, 4100, 4110, 4120, 4130, 4140, 4150, 4160, 4170, 4180, 4190, 4200, 4210, 4220, 4230, 4240, 4250, 4260, 4270, 4280, 4290, 4300, 4310, 4320, 4330, 4340, 4350, 4360, 4370, 4380, 4390, 4400, 4410, 4420, 4430, 4440, 4450, 4460, 4470, 4480, 4490, 4500, 4510, 4520, 4530, 4540, 4550, 4560, 4570, 4580, 4590, 4600, 4610, 4620, 4630, 4640, 4650, 4660, 4670, 4680, 4690, 4700, 4710, 4720, 4730, 4740, 4750, 4760, 4770, 4780, 4790, 4800, 4810, 4820, 4830, 4840, 4850, 4860, 4870, 4880, 4890, 4900, 4910, 4920, 4930, 4940, 4950, 4960, 4970, 4980, 4990, 5000, 5010, 5020, 5030, 5040, 5050, 5060, 5070, 5080, 5090, 5100, 5110, 5120, 5130, 5140, 5150, 5160, 5170, 5180, 5190, 5200, 5210, 5220, 5230, 5240, 5250, 5260, 5270, 5280, 5290, 5300, 5310, 5320, 5330, 5340, 5350, 5360, 5370, 5380, 5390, 5400, 5410, 5420, 5430, 5440, 5450, 5460, 5470, 5480, 5490, 5500, 5510, 5520, 5530, 5540, 5550, 5560, 5570, 5580, 5590, 5600, 5610, 5620, 5630, 5640, 5650, 5660, 5670, 5680, 5690, 5700, 5710, 5720, 5730, 5740, 5750, 5760, 5770, 5780, 5790, 5800, 5810, 5820, 5830, 5840, 5850, 5860, 5870, 5880, 5890, 5900, 5910, 5920, 5930, 5940, 5950, 5960, 5970, 5980, 5990, 6000, 6010, 6020, 6030, 6040, 6050, 6060, 6070, 6080, 6090, 6100, 6110, 6120, 6130, 6140, 6150, 6160, 6170, 6180, 6190, 6200, 6210, 6220, 6230, 6240, 6250, 6260, 6270, 6280, 6290, 6300, 6310, 6320, 6330, 6340, 6350, 6360, 6370, 6380, 6390, 6400, 6410, 6420, 6430, 6440, 6450, 6460, 6470, 6480, 6490, 6500, 6510, 6520, 6530, 6540, 6550, 6560, 6570, 6580, 6590, 6600, 6610, 6620, 6630, 6640, 6650, 6660, 6670, 6680, 6690, 6700, 6710, 6720, 6730, 6740, 6750, 6760, 6770, 6780, 6790, 6800, 6810, 6820, 6830, 6840, 6850, 6860, 6870, 6880, 6890, 6900, 6910, 6920, 6930, 6940, 6950, 6960, 6970, 6980, 6990, 7000, 701

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FRANCE

DGT CHIEF EXPLAINS PLANS FOR INTEGRATED SERVICES NETWORK

Paris ELECTRONIQUE ACTUALITES in French 11 Nov 83 p 22

[Unsigned article]

[Text] During the Forum held as part of the Telecom 83 exposition in Geneva, Mr Dondoux, director general of Telecommunications, gave an address on the evolution of the telecommunication network toward a digital network progressively integrating all services (RNIS), using the example of the French network.

"The advance toward RNIS can only be progressive," stated Mr Dondoux, recalling that "the first stage is the utilization of digital techniques in the present network." The evolution will continue toward an integrated digital network (RNI), "a path being followed by French telecommunications," he added, reviewing the progress of digitization in our country: at the end of 1983, 5 million time-switched lines, amounting to 25 percent of the total number of lines, will have been installed. The number of digital long-distance lines will reach 33 percent of the total, thanks to a systematic use of 140 Mbit and 560 Mbit systems. Digitization will progress similarly in transit centers and local connections, the target for total digitization remaining 1990-1995 depending on the specific fields involved.

In this development plan, DGT (General Directorate for Telecommunications) pointed out a particularly important stage: "In 1985 it will become possible to guarantee a 64 Kbit/s, and even up to a 2 Mbit/s path, to essentially professional users who ask for it, no matter where they are located in the network." This step toward RNI is called the RTC 64 (64 Kbit/s Switched Telephone Network); it opens the way for various switched mode services, such as rapid data transmission, digital telecopying, teleconferences, and so on, thus avoiding the need for special connections. As a necessary condition for guaranteeing data transmission quality on 64 kbit/s channels, the synchronization of the digital network will also be assured by that time, as well as inter-enterprise digital satellite connections through the Telecom 1 network.

Beyond RNI

Mr Dondoux added that "this development and modernization plan for the French network, to satisfy the telephone and telematics fields (videotex, electronic mail, electronic fund transfer, messages, and so on), includes extensive complementary actions designed to expand:

Access facilities to the various services by developing the interchange operation possibilities already partially available among specialized telephone, telex, and Transpac networks;

The performance of current signalization systems (delayed call connections, additional services, network efficiency). The tests that are underway with the CCITT No 7 (International Consultative Committee for Telegraphy and Telephony) semaphore channel signalization system should make it possible to introduce and generalize its use in the network between 1986 and 1990.

However, these actions are not sufficient to fully meet new demands (access to distributed television or radio programs, to data banks, and so on). Nor do they make it possible to satisfy some user needs, in particular simple and simultaneous access to services or terminals of different types. These various aspects of service integration introduce into the network modifications whose magnitude depends primarily on a consideration of broad band services, at which point the infrastructure of the distributed network appears to become a pivotal matter.

In mentioning the stage that follows the data processing integrated network, for instance, Mr Dondoux indicated that two types of development were launched in parallel: RITD (Integrating Network for Telephone and Data), and the videocommunications cable program.

RITD is intended essentially for business users. The goal of the French project Renan is to test on about 100 business subscribers in Paris and Brittany, the digitization techniques of the distribution and integration network for telephones and data. Launched at the beginning of 1983 for CNET (National Center for Telecommunication Studies), it makes it possible to develop equipment that meets international standards for the field: infrastructures for subscriber terminal connections, digitization systems for 2- and 4-wire, 144 kbit/s wires, and adaptation of existing switching centrals for routing data streams toward existing specialized networks.

The videocommunications cable program consists of progressively implanting an optical fiber infrastructure and necessary equipment, at first in order to provide users with access to high fidelity television and sound programs.

"These actions are complementary," stressed DGT. "In fact, the primordial characteristic of the optical fiber infrastructure installed for this first generation, following the Biarritz tests, consists of its adaptability to multiplexed data processing signals, images, sound, and data. That is also why it will be possible to provide on the subscribers' optical fibers, access to broad band analog services as well as to telematic services through the intermediary of digital multiplexing such as those defined for RITD."

Mr Dondoux concluded his address by emphasizing the importance of defining international standards, a prerequisite condition for establishing RNIS. "Considerable work remains to be done," he said, "in defining the standards to be followed, in particular for digitizing broad band signals such as conventional television, high resolution television, videophone, high fidelity sound, and so on, since these standards determine the interchange facilities that are absolutely necessary among national networks. That is a yardstick with which we can measure the magnitude of the activity of international standardization agencies, and of CCITT in particular."

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CSO: 5500/2553

FRANCE

BRIEFS

FRENCH TELECOMMUNICATIONS, ELECTRONICS BUDGET--FF 32.9 billion for telecommunications and the electronics area in 1984--FF 32.9 billion will be earmarked next year, within the budget of the PTT (the French Post Office), for investments in the telecommunications and electronics areas, indicated Mr Louis Mexandeau, Minister of the PTT (Postmaster General), as he presented his department's budget to the National Assembly. FF 30 billion, or 18 percent more than in 1983, are earmarked for telecommunications alone, with FF 2.9 billion for the development of the electronics area, now under the responsibility of the same ministry. In the area of teleprocessing, the PTT intends to apply a considerable effort to increasing the installed inventory of MINITEL terminals from 100,000 at year-end 1983, to 450,000 at the end of next year. The total anticipated expenditure in the overall budget of the PTT for 1984, approved without the presence of the opposition, have been established at FF 135.7 billion, which makes it the largest budget in the civilian sector, with a profit of FF 3.9 billion. [Text] [Paris AFP SCIENCES in French 17 Nov 83 p 13] 6445

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DO, POL, CIP FOR CONTROL OF TELECOMMUNICATIONS SECTOR

ROME 1/8/88/880 in Italian - De- #3 pp 203-207

[Article by Fulvio Fazzolari: "Chaos Down to the Wire"]

[Text] Hostilities are flaring up again over control of this sector: DC [Christian Democratic Party] against PSI [Italian Socialist Party] and DC against DC. The next 6 months are crucial for the renewal of the Italian network. But, for the time being, parties, the STEI [Telephone Finance Corporation], and SIP [Italian Telephone Company] seem to be in the grip of other problems.

Once, they were a kind of promised land. For Italy, telecommunications seemed to be one of the few sectors that were certainly growing: Big investments up to the 1990's (about 50,000 billion lire), new jobs. And above all the opportunity to give the country a system of services (from telephones to data banks) that would be truly modern. Instead, from a promised land, telecommunications became a battlefield.

History in the making, we now have a crisis. STEI and SIP (the two main companies in the sector, both of which are under the IRI [Industrial Reconstruction Institute]) are threatening to reduce their investments and thus, over the next 3 years, 3,000 persons are in danger of losing their jobs and another 3,000 are in danger of having their unemployment benefits run out. On top of that there are legal problems in which STEI is entangled. And then the problem is political, as usual. It might seem odd--but it is not in fact. Telecommunications, a most important sector for the economy and the country's development, have become an area of conflict between the DC and the Socialist Party.

For the time being, the DC has the upper hand. The following are from the DC: the Minister of Posts and Telecommunications Antonio Gava; the Minister of Economy Enrico Cuccia; IRI President Romano Prodi; the deputy STEI Administrator Michele Principe; and SIP deputy Administrator Giovanni De Benedetti. These 5 men, in other words, are all of the key posts for the control of decisions in a sector which, over the next 10 years, would have to invest 50,000 billion lire (new services available to the public) and to manage them.

The socialists have had no voice in this matter ever since Giorgio De Michelis left State Participations for the Ministry of Labor. They therefore run the risk of being excluded from the big decisions on the reorganization of telecommunications. For example, from the decision as to whether, when it comes to managing the public service, the job should be done by SIP under the IRI or by the state agency that is within the Ministry of Posts.

The DC has already attempted some expedients to patch them. It has offered them the chair of Cerruti, president of STET, who is about to go into retirement or of Ottorino Beltrami who is about to be shifted from SIP to the chairmanship of the Milan Fair. They also proposed a name: Carlo Scognamiglio, an economist and former president of Rizzoli in charge of special management matters, already the collaborator of De Michelis in the preparation of the White book on State participations. But there is only one hitch: He is not a socialist. The PSI declined the offer, replying that this was not a matter of having one or more important chairmanships and that, in any case, the name would be chosen by them alone.

There is no lack of conflicts, even with the DC. Being the unchallenged bosses of telecommunications they are, the men of the DC as a matter of fact do not agree among themselves. They are divided between the choice between SIP and ASSI [National Telephones State Board]. And they are similarly divided within the IRI group. Principe and Benzoni belong to two different groupings: The former is closer to Barilla, while the latter is more tied to the DC secretariat and to Prodi. Benzoni does not disdain the idea of hosting Principe out of STET. And this is not technically impossible either following the annual meeting in June 1984 when the current deputy administrator's term is due to run out. The war of the bosses therefore will go on until the middle of next year and will help keep Italian telecommunications in a state of confusion. But the next 6 months will be red-hot not for that alone. Between now and June, there will be many opportunities for clashes, even more serious ones.

Before that date, in matters of fact, the new agreements will have to be ready between the state and the companies that manage the public service.

First of all, SIP. Then, Italcable [expansion unknown] (the other company of the IRI for intercontinental telephone calls) all the way to the smaller outfits (for maritime communications and so on). "On that score," says Emilio Manno, the PSI's man in charge of economics, "we are already 3 years behind the deadline set for December 1982. And the new agreements are indispensable to make it clear how the companies in this sector are to operate in short-range terms."

And what comes after that? "By then," continues Manno, "we have to approve a new 10-year plan for telecommunications, we have to define what services we are going to offer to the country, how much money to invest, and we have to spell out an industrial policy for the companies that work for telecommunications. In this context we must also approve a new law for the institutional setup of the system, in other words, a single public authority, the AR, and together with the state enterprise we have to draft specific sector strategy planning and management control functions."

This will not be easy. "The 80 people," says communist senator Paolo Di Vittorio, "are a single manager only in words. In reality, many of them would prefer to have a stronghold, like the ASI. All of this leads to a power struggle in which there are no philosophies or strategic lines. We are really not considering the country's current or coming capacity. And we take complete responsibility for the whole burden to the shoulders of the taxpayers and the user, who will pay ever higher rates for inadequate service."

In Hungary, waiting can spare telecommunications a month or two. In the meantime, the sector will continue to drift. And Italy will continue to have to wait for a more modern telecommunications system. "For the next several years," noted the economist Giancarlo Lizzari, author of a telecommunications plan in the past, "plans only call for normal expansion of basic telephony operations and the gradual, delayed start of new services which are inadequate both technically and commercially. All of this in a country where, in particular in the industrial sector, there is already a high consumption of data processing."

As a result of bitter debates, crises, and power struggles, the renewal of telecommunications in Italy is moving at a snail's pace. Let us for example take the switch from electromechanics to electronics. The SIP was in the vanguard in 1968, replacing transmission lines. But the exchanges have remained the same. That would be the same as if the trains were moving faster but the stations are jammed. And telephone traffic will continue to feel that situation also in economic terms. For every office or company, the electronic network would permit a saving of 20 percent. For a company of the dimensions of IRI, for example, the saving could be about 3 or 4 billion in costs per year, at least.

But one phase switching also continues to be almost a village. In 1990, only 10 percent of the network will have been renewed. The delay is due to service agreements such as SIP. But it is also due to the computerizing companies, such as Fiatel (expensive unknown) which is also under the IRI which, until now, constituted entirely too much. Old projects, such as Protos, aged in time have never had, to speed things up, we had to entrust ourselves to the hands of the Dallas.

But all of this might turn out to be useless if other delays or postponements should pile up. For example, if the SIP should decide for the time being to cut the investments from 4,000 down to 2,000 billion. "Telecommunications in Italy," comments Lizzari, "would fall even further behind. For example, the French, and the British are already working with satellite communications and new services are a reality there. What about Italy? There has been a proposal to return SIP to private control and that would be a good idea for the private affairs. In the meantime we continue to have a public service which is not satisfactory, the user will have to continue to pay for his own sake." Telecommunications, in summary, are risking becoming left behind. It has happened already in the case of the SIP (the SIP is the SIP), the public manager does not have a good idea of the services needed, and the SIP is not the SIP.

1987

1987

AGENCY MOVING AHEAD WITH USE OF FIBER OPTICS FOR PHONE NET

Oslo AFTENPOSTEN in Norwegian 24 Nov 83 p 10

/Article by Rolf L. Larsen: "Telecommunication Service in Hair-Thin Cables: Rapid Introduction of Fiber Optics into Our Telephone Network"/

/Text/ Systems of fiberoptic lines are coming in earnest to the Norwegian telecommunications network. The first telecommunications service of this type already has been put into use with the underwater fiberoptic cable between Aurland and Flaam in Sogn. Experimental operation of a fiberoptic system was commenced in Oslo this fall, and in 1986, trial operation will begin on the longest-yet fiberoptic system in Norway: between Gol and Hoenefoss. The system will be 117 kilometers long and will be able to handle about 2,000 telephone conversations. There is enormous development worldwide in fiberoptics. It is expected that the first underwater transatlantic fiberoptic cable between North America and Europe will be able to be laid in 1988.

The technique of fiberoptic transmission has the capacity for breaking through into all parts of the telecommunications network, both on a domestic and an international basis. Johannes Dahl, a department engineer in the telephone company Transmission Office told AFTENPOSTEN that on the domestic front, fiber cable will be a very important part of the shorter-distance network in the large cities.

It was in 1966 that two British researchers introduced the scientific basis for telecommunication using a fiberoptic system. An optical fiber is a thin glass fiber with the thickness of a human hair. It is made of extremely pure glass, such that virtually no decrease in intensity occurs when light is transmitted through the fiber. From a theoretical standpoint, optical fibers have a much greater capacity for transmitting signals than today's largest communications systems using copper cables. Using the current /fiberoptic/ technology, it is possible to send as many as 7,000 simultaneous telephone conversations through one fiber with a diameter of 0.1 mm.

Department engineer Dagfinn Hjemaaas of the telephone company Transmission Office states: "It is possible to transmit all types of telecommunications using fiberoptics systems: telephone, data, telex, telefax and television. This fact opens up enormous possibilities. There are also a series of other advantages to fiberoptic systems. They are cheaper to operate and easier to maintain.

There should also be resultant decreased excavation in urban areas. A large portion of urban cable installations have been adapted so that the fiber cables can be pulled through them at the time of arctic installations."

He and department engineer Johannes Dahl are taking courses now to increase their knowledge and prepare themselves for the future need for expanded fiberoptic installations. Approximately 20 dealers, installers, technicians and engineers from the telephone company have attended three such courses this fall here in Norway. It is the telephone company, together with the suppliers of the fiberoptic line equipment, who are backing this program. The intention is that starting next fall, the courses will be held at the Telephone School in Trondheim, and in the coming years, about 25 telephone people annually will complete such courses at this school.

And there are many tasks to undertake: Between Kongensgate and Røverkollen in Oslo, a large experimental fiberoptics project is under way. This system will be tested in about a year. Thereafter, it is possible that this fiberoptic network can be used in normal operations.

Department engineer Dahl states: "We expect in 1986 to begin trial operations using the country's longest fiberoptics cable system. This is to be laid between Mol and Hønefoss and become part of the long-distance connections between Oslo and Bergen. The stretch will be about 117 kilometers long, and a system will be put together which will be able to handle approximately 2,000 telephone conversations. An enormous expansion of fiberoptic communication systems is also under way in other countries. Great progress has been made in this field in Japan, the United States, Canada, Great Britain, West Germany, Italy, France and Sweden. It is expected that use of the first transatlantic underwater fiberoptic cable, which is to be laid between North America and the British Isles, will commence in 1988."

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SIMONSEN ELECTRO A/S ENJOYING SUCCESS WITH MOBILE PHONE SALES

Oslo AFTENPOSTEN in Norwegian 28 Nov 83 p 25

/Article by Ulf Peter Hellstrom: "Norwegian Mobile Telephones Retain Share of Market"/

/Text/ "We have not joined in the price war on mobile telephones in which some of our competitors have engaged this year. Nonetheless, we have retained our share of the market, which is around 10 percent, representing sales of 1,200 mobile telephones. We are satisfied with this." The foregoing is according to Roald Aarset, the administrative director of the Norwegian communications company, Simonsen Elektro A/S, which has increased its sales by 16 percent in the first 8 months of this year. The result after outstanding items should be about 600,000 kroner.

Aarset states: "Both sales and results will be dependent largely on developments during the course of November and December, which traditionally are extremely important months for us. Our goal has been to increase sales by 20 percent from 25 million /kroner/ in 1982 to 30 million this year. We are a bit behind that goal." During the summer the company came out with a private offering of 175,000 shares of stock. Shortly thereafter, it appeared on the unofficial trading list. Recently, the stock has been selling for about 65 kroner per share, but last week, the price fell to about 60 kroner.

Managing director Willy Simonsen is disappointed over the falling-price development, but says: "Meanwhile, I am optimistic with regard to developments in the near future. We have growth, simultaneous with an equity interest of 66 percent, and profitability is holding steady. Moreover, we have introduced an energy-efficient new product which permits usage of a mobile telephone for five times longer than previously. Quite simply, we think that we are competitive."

As of the time in the early summer of the private placement of 175,000 shares and the sale by the Simonsen family of 100,000 shares of its stock, the drawing rate was 80 kroner.

The Norwegian telephone manufacturer, with its approximately 70 employees and sales of about 30 million kroner, is of relatively limited size in relation to the large foreign companies who are competing for portable telecommunications business in Norway. Accordingly, the company has chosen a different strategy

than many of its competitors, who use price as an important weapon in the fight for a share of the market.

"We do not have the opportunity to do that. Nor do we desire it, since the constant discounts give customers a false picture of the real cost of such products. The firm must maintain its margins in order to obtain the resources for the extremely capital-intensive research and development which are required to continue," Aarset maintains.

The Simonsen firm, therefore, has directed its attentions toward those groups of customers who want to use commercial telephone equipment for professional use, and who, therefore, are willing to pay something more for the products. In Aarset's view: "The requirements set forth by the telephone company respecting automatic mobile telephones for the potentially lucrative Scandinavian system, NMT, are viewed by us as minimum standards, which we try to exceed. Our philosophy is that serious Norwegian users are particularly interested in equipment which really functions, and under difficult radio conditions as well. If we manage to satisfy Norwegian users, we ought to have an apparatus which is effective also in the other Scandinavian countries, to which we likely will export."

The NMT system was introduced 2 years ago and now has 20,000 subscribers in Norway. According to telephone company prognoses, the number will exceed 100,000 before the end of the 1980's. Large parts of southern Norway are covered today by the network, with the mid-portion of the country to follow suit next year when a new exchange for automatic mobile telephones is put into operation in Trondheim. The following year large portions of northern Norway will also be connected to NMT. At the international level, it is estimated that there presently are approximately 2 million mobile telephones in use. If the predictions prove correct that this represents only one percent of the market, this branch of industry should realize very satisfying sales figures in the 1980's.

"We have faith that the market is expanding and that our products will become competitive among professional users such as the military, police and the business community," says Aarset.

The Norwegian company has a production facility in Meldal in Sor-Trondelag with employment for 40. The workforce is mostly women. The production plant was built with support from the Districts' Development Fund and Orkla Industries, which have been in operation for a long time in the old mining community.

The company's latest product is a new mobile telephone which, with the help of a new antenna construction and a reduction in the power consumption needed for transmitting--among other things--should become the firm's weapon in the competition in the coming years. All automatic mobile telephones are made for use in the car, powered by the auto's electrical system. Certain types can be removed relatively easily from the car and utilized in a cabin or boat or as a portable telephone, powered by its own accumulator battery. Previously, each charge of the battery has sufficed for only a quite short period of conversation, and this has limited the use of mobile telephones out in nature.

The Norwegian company is now coming out with a new mobile telephone with an arrangement which will conserve power, such that one will be able to hold a conversation for about 5 hours longer for each recharge of the battery. Among other things, the new telephone contains three microprocessors which control the signal treatment in the apparatus.

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